

Edgar Filing: Tennessee Valley Authority - Form 10-K

Tennessee Valley Authority  
Form 10-K  
November 20, 2015  
Table of Contents

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549  
FORM 10-K

(MARK ONE)

ANNUAL REPORT PURSUANT TO  
SECTION 13, 15(d), OR 37 OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended September 30, 2015

OR  
 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_  
Commission file number 000-52313

TENNESSEE VALLEY AUTHORITY

(Exact name of registrant as specified in its charter)

A corporate agency of the United States created by an act of Congress  
(State or other jurisdiction of incorporation or organization)

62-0474417

(IRS Employer Identification No.)

400 W. Summit Hill Drive

Knoxville, Tennessee

(Address of principal executive offices)

(865) 632-2101

(Registrant's telephone number, including area code)

37902

(Zip Code)

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13, Section 15(d), or Section 37 of the Act. Yes  No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13, 15(d), or 37 of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Edgar Filing: Tennessee Valley Authority - Form 10-K

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes  No

Table of Contents

Table of Contents

GLOSSARY OF COMMON

ACRONYMS.....

FORWARD-LOOKING

INFORMATION.....

GENERAL

INFORMATION.....

PART I

ITEM 1.

BUSINESS.....

The Corporation.....

Service Area.....

Customers.....

Rates.....

Power Supply and Cleaner Energy Initiatives.....

Fuel Supply.....

Transmission.....

Weather and Seasonality.....

Competition.....

Research and Development.....

Flood Control

Activities.....

Environmental Stewardship

Activities.....

Economic Development Activities.....

Regulation.....

Taxation and Tax Equivalentents.....

Environmental Matters.....

Employees.....

ITEM 1A. RISK

FACTORS.....

ITEM 1B. UNRESOLVED STAFF

COMMENTS.....

ITEM 2.

PROPERTIES.....

Generating Properties.....

Transmission Properties.....

Natural Resource Stewardship Properties.....

Buildings.....

Disposal of Property.....

ITEM 3. LEGAL

PROCEEDINGS.....

ITEM 4. MINE SAFETY DISCLOSURES.....

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.....

ITEM 6. SELECTED FINANCIAL DATA.....

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.....

Overview.....

Business and Mission.....

Executive Overview.....

Results of Operations.....

Liquidity and Capital Resources.....

Off-Balance Sheet Arrangements.....

Key Initiatives and Challenges.....

Critical Accounting Policies and

Estimates.....

Fair Value Measurements.....

New Accounting Standards and Interpretations.....

Legislative and Regulatory Matters.....

Environmental Matters.....

Legal Proceedings.....

Risk Management Activities.....

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.....

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.....

Consolidated Statements of Operations.....

Consolidated Statements of Comprehensive Income (Loss).....

Consolidated Balance Sheets.....

Consolidated Statements of Cash Flows.....

Table of Contents

Consolidated Statements of Changes in Proprietary Capital.....  
Notes to Consolidated Financial Statements.....  
Report of Independent Registered Public Accounting Firm.....

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.....

ITEM 9A. CONTROLS AND PROCEDURES.....

Disclosure Controls and Procedures.....  
Internal Control over Financial Reporting.....  
Report of Independent Registered Public Accounting Firm.....

ITEM 9B. OTHER INFORMATION.....

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE.....

Directors.....  
Executive Officers.....  
Disclosure and Financial Code of Ethics.....  
Committees of the TVA Board.....

ITEM 11. EXECUTIVE COMPENSATION.....

Compensation Discussion and Analysis.....  
Executive Compensation Tables and Narrative Disclosures.....  
Retirement and Pension Plans.....  
Nonqualified Deferred Compensation.....  
Potential Payments on Account of Retirement/Resignation, Termination without Cause, Termination with Cause, or Death/Disability.....  
Other Agreements.....  
Director Compensation.....  
Compensation Committee Interlocks and Insider Participation.....  
Compensation Committee Report.....

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCK MATTERS.....

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.....

Director Independence.....  
Related Party Transactions.....

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.....

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT  
SCHEDULES.....

SIGNATURES.....

EXHIBIT

INDEX.....

Table of Contents

## GLOSSARY OF COMMON ACRONYMS

Following are definitions of some of the acronyms frequently used in this Annual Report on Form 10-K for the fiscal year ended September 30, 2015 (the “Annual Report”):

Term or Acronym	Definition
AFUDC	Allowance for funds used during construction
AOCI	Accumulated other comprehensive income (loss)
ARO	Asset retirement obligation
ART	Asset Retirement Trust
ASLB	Atomic Safety and Licensing Board
BEST	Bellefonte Efficiency and Sustainability Team
BLEU	Blended low-enriched uranium
BREDL	Blue Ridge Environmental Defense League
BSER	Best system of emission reduction
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CCP	Coal combustion products
CCR	Coal combustion residuals
CCW	Coal combustion waste
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CME	Chicago Mercantile Exchange
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
COL	Combined construction and operating license application
COLA	Cost-of-living adjustment
CSAPR	Cross State Air Pollution Rule
CTs	Combustion turbine unit(s)
CVA	Credit valuation adjustment
CY	Calendar year
DCP	Deferred Compensation Plan
DER	Distributed energy resources
DEU	Discounted energy units
DOE	Department of Energy
EPA	Environmental Protection Agency
ERS	EnergyRight® Solutions programs
ESPA	Early Site Permit Application
FASB	Financial Accounting Standards Board
FCM	Futures Commission Merchant
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
FTP	Financial Trading Program
GAAP	Accounting principles generally accepted in the United States of America
GAO	U.S. Government Accountability Office
GHG	Greenhouse gas
GPP	Green Power Providers
GWh	Gigawatt hour(s)
IRP	Integrated Resource Plan
IRUs	Indefeasible rights of use
JSCCG	John Sevier Combined Cycle Generation LLC

Edgar Filing: Tennessee Valley Authority - Form 10-K

kWh	Kilowatt hour(s)
LIBOR	London Interbank Offered Rate
LPC	Local power company customer of TVA
LTDCP	Long-Term Deferred Compensation Plan

4

---



Table of Contents

MATS	Mercury and Air Toxics Standards
MD&A	Management’s Discussion and Analysis of Financial Condition and Results of Operations
MLGW	Memphis Light, Gas and Water Division
MLPs	Master Limited Partnerships
mmBtu	Million British thermal unit(s)
MSO	Mixed oxide
MtM	Mark-to-market
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAV	Net asset value
NDT	Nuclear Decommissioning Trust
NEIL	Nuclear Electric Insurance Limited
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NO <sub>x</sub>	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NRP	Natural Resource Plan
NSPS	New Source Performance Standards
NSR	New Source Review
NYSE	New York Stock Exchange
OCI	Other comprehensive income (loss)
OMB	Office of Management and Budget
PARRS	Putable Automatic Rate Reset Securities
PM	Particulate matter
PSD	Prevention of Significant Deterioration
QER	Quadrennial Energy Review
QTE	Qualified technological equipment and software
REIT	Real Estate Investment Trust
RSO	Renewable Standard Offer
SACE	Southern Alliance for Clean Energy
SCCG	Southaven Combined Cycle Generation LLC
SCRs	Selective catalytic reduction systems
SEC	Securities and Exchange Commission
SERP	Supplemental Executive Retirement Plan
Seven States	Seven States Power Corporation
SHLLC	Southaven Holdco LLC
SMR	Small modular reactor(s)
SO <sub>2</sub>	Sulfur dioxide
SOA	Society of Actuaries
SSSL	Seven States Southaven, LLC
TCWN	Tennessee Clean Water Network
TDEC	Tennessee Department of Environment & Conservation
TIPS	Treasury Inflation-Protected Securities
TOU	Time-of-use
TVARS	Tennessee Valley Authority Retirement System
TN Board	Tennessee Board of Water Quality, Oil and Gas
TWQCB	Tennessee Water Quality Control Board

Edgar Filing: Tennessee Valley Authority - Form 10-K

USEC  
U.S. Treasury  
VIE  
XBRL  
WCD

United States Enrichment Corporation  
United States Department of the Treasury  
Variable interest entity  
eXtensible Business Reporting Language  
Waste Confidence Decision

5

---

Table of Contents

FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K ("Annual Report") contains forward-looking statements relating to future events and future performance. All statements other than those that are purely historical may be forward-looking statements. In certain cases, forward-looking statements can be identified by the use of words such as "may," "will," "should," "expect," "anticipate," "believe," "intend," "project," "plan," "predict," "assume," "forecast," "estimate," "objective," "probably," "likely," "potential," "speculate," the negative of such words, or other similar expressions.

Although the Tennessee Valley Authority ("TVA") believes that the assumptions underlying the forward-looking statements are reasonable, TVA does not guarantee the accuracy of these statements. Numerous factors could cause actual results to differ materially from those in the forward-looking statements. These factors include, among other things:

- New, amended, or existing, laws, regulations, or administrative orders, including those related to environmental matters, and the costs of complying with these laws, regulations, and administrative orders;
- The cost of complying with known, anticipated, and new emissions reduction requirements, some of which could render continued operation of many of TVA's aging coal-fired generation units not cost-effective and result in their removal from service, perhaps permanently;
- Actions taken, or inaction, by the U.S. government relating to the national debt ceiling or automatic spending cuts in government programs;
- Costs and liabilities that are not anticipated in TVA's financial statements for third-party claims, natural resource damages, or fines or penalties associated with unexpected failures of a facility or infrastructure as well as for environmental clean-up activities;
- Addition or loss of customers by TVA or the local power company customers of TVA ("LPCs");
- Significant changes in demand for electricity which may result from, among other things, economic downturns, increased energy efficiency and conservation, and improvements in distributed generation and other alternative generation technologies;
- Significant delays, cost increases, or cost overruns associated with the construction of generation or transmission assets;
- Changes in the timing or amount of pension and health care costs;
- Increases in TVA's financial liabilities for decommissioning its nuclear facilities or retiring other assets;
- Physical or cyber attacks on TVA's assets;
- The outcome of legal or administrative proceedings;
- The failure of TVA's generation, transmission, flood control, and related assets, including coal combustion residual ("CCR") facilities, to operate as anticipated, resulting in lost revenues, damages, and other costs that are not reflected in TVA's financial statements or projections;
  - Differences between estimates of revenues and expenses and actual revenues earned and expenses incurred;
- Weather conditions;
  - Catastrophic events such as fires, earthquakes, explosions, solar events, electromagnetic pulses, droughts, floods, hurricanes, tornadoes, pandemics, wars, national emergencies, terrorist activities, and other similar events, especially if these events occur in or near TVA's service area;
  - Events at a TVA facility, which, among other things, could result in loss of life, damage to the environment, damage to or loss of the facility, and damage to the property of others;
  - Events or changes involving transmission lines, dams, and other facilities not operated by TVA, including those that affect the reliability of the interstate transmission grid of which TVA's transmission system is a part and those that increase flows across TVA's transmission grid;
  - Disruption of fuel supplies, which may result from, among other things, weather conditions, production or transportation difficulties, labor challenges, or environmental laws or regulations affecting TVA's fuel suppliers or

transporters;

• Purchased power price volatility and disruption of purchased power supplies;

• Events which affect the supply of water for TVA's generation facilities;

• Changes in TVA's determinations of the appropriate mix of generation assets;

• TVA's organizational transformation efforts or cost reduction efforts not being fully successful;

• Inability to obtain, or loss of, regulatory approval for the construction or operation of assets;

• The requirement or decision to make additional contributions to TVA's pension or other post-retirement benefit plans or to TVA's Nuclear Decommissioning Trust ("NDT") or Asset Retirement Trust ("ART");

• Limitations on TVA's ability to borrow money which may result from, among other things, TVA's approaching or substantially reaching the limit on bonds, notes, and other evidences of indebtedness specified in the Tennessee Valley Authority Act of 1933, as amended;

• An increase in TVA's cost of capital which may result from, among other things, changes in the market for TVA's debt securities, changes in the credit rating of TVA or the U.S. government, or, potentially, an increased reliance by TVA on alternative financing should TVA approach its debt limit;

• Changes in the economy and volatility in financial markets;

• Changes in technology;

• Reliability and creditworthiness of counterparties;

• Changes in the market price of commodities such as coal, uranium, natural gas, fuel oil, crude oil, construction materials, reagents, electricity, and emission allowances;

## Table of Contents

- Changes in the market price of equity securities, debt securities, and other investments;
- Changes in interest rates, currency exchange rates, and inflation rates;
- Ineffectiveness of TVA's disclosure controls and procedures or its internal control over financial reporting;
- Inability to eliminate identified deficiencies in TVA's systems, standards, controls, or corporate culture;
- Inability to attract or retain a skilled workforce;
  - Events at a nuclear facility, whether or not operated by or licensed to TVA, which, among other things, could lead to increased regulation or restriction on the construction, ownership, operation, and decommissioning of nuclear facilities or on the storage of spent fuel, obligate TVA to pay retrospective insurance premiums, reduce the availability and affordability of insurance, increase the costs of operating TVA's existing nuclear units, negatively affect the feasibility of preserving Bellefonte Nuclear Plant ("Bellefonte") Unit 1 for possible completion, and cause TVA to forego future construction at these or other facilities;
- Loss of quorum of the TVA Board of Directors; and
- Other unforeseeable events.

See also Item 1A, Risk Factors, and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations. New factors emerge from time to time, and it is not possible for management to predict all such factors or to assess the extent to which any factor or combination of factors may impact TVA's business or cause results to differ materially from those contained in any forward-looking statement. TVA undertakes no obligation to update any forward-looking statement to reflect developments that occur after the statement is made.

## GENERAL INFORMATION

### Fiscal Year

References to years (2015, 2014, etc.) in this Annual Report are to TVA's fiscal years ending September 30 except for references to years in the biographical information about directors and executive officers in Item 10, Directors, Executive Officers and Corporate Governance, as well as to years that are preceded by "CY," which references are to calendar years.

### Notes

References to "Notes" are to the Notes to Consolidated Financial Statements contained in Item 8, Financial Statements and Supplementary Data in this Annual Report.

### Property

TVA does not own real property. TVA acquires real property in the name of the United States, and such legal title in real property is entrusted to TVA as the agent of the United States to accomplish the purpose of the Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (the "TVA Act"). TVA acquires personal property in the name of TVA. Accordingly, unless the context indicates the reference is to TVA's personal property, any statement in this Annual Report referring to TVA property shall be read as referring to the real property of the United States which has been entrusted to TVA as its agent.

### Available Information

TVA files annual, quarterly, and current reports with the Securities and Exchange Commission ("SEC") under Section 37 of the Securities Exchange Act of 1934. TVA's SEC filings are available to the public over the Internet at the SEC's website at [www.sec.gov](http://www.sec.gov). TVA also hosts or posts the filings for the most recent five-year period on its website at

www.tva.gov. Information contained on TVA's web site shall not be deemed to be incorporated into, or to be a part of, this Annual Report.

Table of Contents

PART I

ITEM 1. BUSINESS

The Corporation

The Tennessee Valley Authority ("TVA") is a corporate agency and instrumentality of the United States ("U.S.") that was created in 1933 by legislation enacted by the U.S. Congress in response to a request by President Franklin D. Roosevelt. TVA was created to, among other things, improve navigation on the Tennessee River, reduce the damage from destructive flood waters within the Tennessee River system and downstream on the lower Ohio and Mississippi Rivers, further the economic development of TVA's service area in the southeastern United States, and sell the electricity generated at the facilities TVA operates.

Today, TVA operates the nation's largest public power system and supplies power in most of Tennessee, northern Alabama, northeastern Mississippi, and southwestern Kentucky and in portions of northern Georgia, western North Carolina, and southwestern Virginia to a population of over nine million people. In 2015, the revenues generated from TVA's electricity sales were \$10.8 billion and accounted for virtually all of TVA's revenues.

TVA manages the Tennessee River, its tributaries, and certain shorelines to provide, among other things, year-round navigation, flood damage reduction, and affordable and reliable electricity. Consistent with these primary purposes, TVA also manages the river system to provide recreational opportunities, adequate water supply, improved water quality, natural resource protection, and economic development. TVA performs these management duties in cooperation with other federal and state agencies which have jurisdiction and authority over certain aspects of the river system. In addition, the TVA Board of Directors (the "TVA Board") established two councils — the Regional Resource Stewardship Council and the Regional Energy Resource Council — under the Federal Advisory Committee Act to advise TVA on its stewardship activities in the Tennessee Valley and its energy resource activities.

Initially, all TVA operations were funded by federal appropriations. Direct appropriations for the TVA power program ended in 1959, and appropriations for TVA's stewardship, economic development, and multipurpose activities ended in 1999. Since 1999, TVA has funded all of its operations almost entirely from the sale of electricity and power system financings. TVA's power system financings consist primarily of the sale of debt securities and secondarily of alternative forms of financing such as lease arrangements. As a wholly-owned government corporation, TVA is not authorized to issue equity securities.

Service Area

The area in which TVA sells power, its service area, is defined by the TVA Act. Under the TVA Act, subject to certain minor exceptions, TVA may not, without specific authorization from the U.S. Congress, enter into contracts that would have the effect of making it, or the local power company customers of TVA ("LPCs") which distribute TVA power, a source of power supply outside the area for which TVA or its LPCs were the primary source of power supply on July 1, 1957. This provision is referred to as the "fence" because it bounds TVA's sales activities, essentially limiting TVA to power sales within a defined service area.

In addition, the Federal Power Act ("FPA") includes a provision that helps protect TVA's ability to sell power within its service area. This provision, called the "anti-cherry-picking" provision, prevents the Federal Energy Regulatory Commission ("FERC") from ordering TVA to provide access to its transmission lines to others to deliver power to customers within TVA's defined service area. As a result, the anti-cherry-picking provision reduces TVA's exposure to loss of customers.





Table of Contents

TVA's revenues by state for each of the last three years are detailed in the table below.

## Operating Revenues By State

For the years ended September 30

(in millions)

	2015	2014	2013
Alabama	\$1,582	\$1,611	\$1,551
Georgia	267	268	260
Kentucky	660	680	1,019
Mississippi	1,023	1,056	1,029
North Carolina	58	58	52
Tennessee	7,189	7,246	6,818
Virginia	50	51	53
Subtotal	10,829	10,970	10,782
Sale for resale and other	18	29	47
Subtotal	10,847	10,999	10,829
Other revenues	156	138	127
Operating revenues	\$11,003	\$11,137	\$10,956

## Note

See Power Supply and Cleaner Energy Initiatives — Coal-Fired for a discussion of idled coal-fired units.

Table of Contents

## Customers

TVA is primarily a wholesaler of power. It sells power to LPCs which then resell power to their customers at retail rates. TVA's LPCs consist of (1) municipalities and other local government entities ("municipalities") and (2) customer-owned entities ("cooperatives"). These municipalities and cooperatives operate public power electric systems whose primary purpose is not to make a profit but to supply electricity to the general public or its members. TVA also sells power to directly served customers, primarily customers with very large loads and federal agencies with loads larger than 5,000 kW. Whether TVA or a LPC serves a particular new load is determined by TVA-LPC contract provisions that take into account load projections, facilities investments, and the number of residential customers served by the LPC. In addition, power in excess of the needs of the TVA system may, where consistent with the provisions of the TVA Act, be sold under exchange power arrangements with other electric systems. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations — Financial Results — Operating Revenues.

## Operating Revenues by Customer Type

For the years ended September 30

(in millions)

	2015	2014	2013
Revenue from sales of electricity			
Local power companies	\$9,998	\$10,062	\$9,463
Industries directly served	701	780	1,199
Federal agencies and other	148	157	167
Total sales of electricity	10,847	10,999	10,829
Other revenues	156	138	127
Operating revenues	\$11,003	\$11,137	\$10,956

## Local Power Companies

Revenues from LPCs accounted for approximately 91 percent of TVA's total operating revenues in 2015. At September 30, 2015, TVA had wholesale power contracts with 155 LPCs. Each of these contracts requires the LPC to purchase from TVA all of its electric power and energy consumed within the TVA service area. All LPCs purchase power under contracts that require five, ten, twelve, or fifteen years notice to terminate.

The number of LPCs with the contract arrangements described above, the revenues derived from such arrangements in 2015, and the percentage of TVA's 2015 total operating revenues represented by these revenues are summarized in the table below.

## TVA Local Power Company Customer Contracts

At September 30, 2015

Contract Arrangements <sup>(1)</sup>	Number of LPCs	Sales to LPCs in 2015 (in millions)	Percentage of Total Operating Revenues in 2015	
15-year termination notice	7	\$196	1.8	%
12-year termination notice	1	25	0.2	%
10-year termination notice	49	3,399	30.9	%
5-year termination notice	98	6,378	58.0	%
Total	155	\$9,998	90.9	%

Note

(1) Ordinarily, the LPCs and TVA have the same termination notice period; however, in contracts with five of the LPCs with five-year termination notices, TVA has a 10-year termination notice (which becomes a five-year termination notice if TVA loses its discretionary wholesale rate-setting authority). Two of the LPCs have five-year termination notices or a shorter period if any act of Congress, court decision, or regulatory change requires or permits that election. Also, under TVA's contract with Bristol Virginia Utilities, a five-year termination notice may not be given by the LPC until January 2018.

TVA's two largest LPCs — Memphis Light, Gas and Water Division ("MLGW") and Nashville Electric Service ("NES") — have contracts with five-year and 10-year termination notice periods, respectively. Although no single customer accounted for 10 percent or more of TVA's total operating revenues in 2015, sales to MLGW and NES accounted for nine percent and eight percent, respectively.

The power contracts between TVA and LPCs provide for purchase of power by LPCs at the wholesale rates established by the TVA Board. Under Section 10 of the TVA Act, the TVA Board is authorized to regulate LPCs to carry out the purposes of the TVA Act through contract terms and conditions as well as through rules and regulations. TVA regulates LPCs primarily through the provisions of TVA's wholesale power contracts. All of the power contracts between TVA and the LPCs require that power purchased from TVA be sold and distributed to the ultimate consumer without discrimination among consumers of the

## Table of Contents

same class, and prohibit direct or indirect discriminatory rates, rebates, or other special concessions. In addition, there are a number of wholesale power contract provisions through which TVA seeks to ensure that the electric system revenues of the LPCs are used only for electric system purposes. Furthermore, almost all of these contracts specify the specific resale rates and charges at which the LPC must resell TVA power to its customers. These rates are revised from time to time, subject to TVA approval, to reflect changes in costs, including changes in the wholesale cost of power. The regulatory provisions in TVA's wholesale power contracts are designed to carry out the objectives of the TVA Act, including the objective of providing for an adequate supply of power at the lowest feasible rates. See Rates — Rate Methodology below.

Through service practice standards that were adopted in 1979, TVA also regulates LPC policies for customer deposits, termination, information to consumers, and billing. On November 6, 2014, the TVA Board approved a revised service practice policy framework. The new framework provides for enhanced, consistent regulatory policy for ratepayers across the Tennessee Valley, while both upholding the intent of the original standards and recognizing local considerations.

### Other Customers

Revenues from directly served industrial customers accounted for approximately seven percent of TVA's total operating revenues in 2015. Contracts with these customers are subject to termination by the customer or TVA upon a minimum notice period that varies according to the customer's contract demand and the period of time service has been provided.

### Rates

#### Rate Authority

The TVA Act gives the TVA Board sole responsibility for establishing the rates TVA charges for power. These rates are not subject to judicial review or to review or approval by any state or federal regulatory body.

Under the TVA Act, TVA is required to charge rates for power which will produce gross revenues sufficient to provide funds for:

- Operation, maintenance, and administration of its power system;
- Payments to states and counties in lieu of taxes ("tax equivalents");
- Debt service on outstanding indebtedness;
- Payments to the U.S. Treasury in repayment of and as a return on the government's appropriation investment in TVA's power facilities (the "Power Program Appropriation Investment"); and
  - Such additional margin as the TVA Board may consider desirable for investment in power system assets, retirement of outstanding bonds, notes, or other evidences of indebtedness ("Bonds") in advance of maturity, additional reduction of the Power Program Appropriation Investment, and other purposes connected with TVA's power business.

In setting TVA's rates, the TVA Board is charged by the TVA Act to have due regard for the primary objectives of the TVA Act, including the objective that power shall be sold at rates as low as are feasible.

#### Rate Methodology

In view of demand for electricity, the level of competition, and other relevant factors, it is reasonable to assume that rates, set at levels that will recover TVA's costs, can be charged and collected from customers. Further, the TVA

Board has the discretion to determine when costs will be recovered in rates. As a result of these factors, TVA records certain assets and liabilities that result from the self-regulated ratemaking process that could not otherwise be so recorded under accounting principles generally accepted in the United States. See Note 1 — Cost-Based Regulation and Note 9.

In setting rates to cover the costs set out in the TVA Act, TVA uses a wholesale rate structure that is comprised of a base rate and a fuel rate that is automatically determined each month by the operation of the fuel cost adjustment formula. In setting the base rates, TVA uses a debt-service coverage ("DSC") methodology to derive annual revenue requirements in a manner similar to that used by other public power entities that also use the DSC rate methodology. Under the DSC methodology, rates are calculated so that an entity will be able to cover its operating costs and to satisfy its obligations to pay principal and interest on debt. This ratemaking approach is particularly suitable for use by entities financed primarily, if not entirely, by debt capital, such as TVA.

TVA's revenue requirements for costs or projected costs (other than the fuel, purchased power, and related costs covered by the fuel rate) are calculated under the DSC methodology as the sum of the following components:

- Operating and maintenance costs;
- Tax equivalents (other than the amount attributable to fuel cost-related revenues);
- Other costs in accordance with the TVA Act;
- and

Table of Contents

Debt service coverage.

This methodology reflects the cause-and-effect relationship between TVA's costs and the corresponding rates it charges for its regulated products and services. Once the revenue requirements (or projected costs) are determined, they are compared to the projected revenues for the year in question, at existing rates, to arrive at the shortfall or surplus of revenues as compared to the projected costs. Power rates are adjusted by the TVA Board to a level deemed to be sufficient to produce revenues approximately equal to projected costs (exclusive of the costs collected through the fuel rate).

TVA's wholesale and retail rate structures include time-of-use ("TOU") and seasonal demand and energy ("SDE") rate structures to more closely align TVA's revenues with its costs. Recent rate structure changes provide customers with pricing that is more reflective of their cost, allowing them to make better informed choices regarding electricity use during higher cost periods.

TVA has worked with its customers to enhance rate structures and pricing signals with the goal of reducing the overall cost of providing electric service within the Tennessee Valley. The two-year collaborative effort culminated with the TVA Board approving rate structure revisions and a rate adjustment on August 21, 2015. Below is a summary of these revisions, which, with the exception of the rate adjustment, were designed to recover the same overall revenue for TVA. Rate structure changes, however, will impact every customer differently with certain customers paying slightly more and others paying slightly less based on past and future usage.

As of October 1, 2015, all 155 LPCs were taking service under a TOU structure. The new wholesale rate structure for LPCs includes capacity-related demand charges that are billed during on-peak periods and energy rates that differ by on-peak and off-peak periods each month. Such energy rates are designed to recover marginal costs and include pricing differentials that reflect the wholesale market.

Large customers, including those directly served by TVA and those served by LPCs, are metered separately. TVA developed a rate structure similar to the rate structure of the LPCs, which provides incentives for high load factor and off-peak usage. While some customers are still making their elections, the majority have chosen the TOU rate structure. Other qualifying customers will transition to the TOU structure by 2017.

TVA and its customers collaborated on a revised cost-of-service methodology. The resulting cost-of-service study reflects multiple different points of view and was used as a guide for the rate structure changes. Small changes in revenue allocation improve alignment with cost-of-service, while also ensuring industrial rates are competitive and residential rates are affordable.

As part of the comprehensive rate restructuring, TVA's existing environmental adjustment ("EA") was modified to conform with the new wholesale and large-customer rate designs. While revised slightly, the EA will collect approximately the same revenue as before the rate structure changes. The EA recovered approximately \$439 million in 2015.

TVA's rates include a fuel cost adjustment mechanism that automatically adjusts rates each month to recover the cost TVA pays for fuel. Such costs include natural gas, fuel oil, purchased power, coal, emission allowances, nuclear fuel, and other fuel-related commodities; they also incorporate realized gains and losses on derivatives purchased to hedge the costs of such commodities, and tax equivalents associated with fuel cost adjustments.

On August 21, 2015, the TVA Board approved modifications from the current fuel cost adjustment methodology, which is based on an average fuel rate, to a methodology that is based on a class specific rate. Fuel costs for LPCs and large customers are now allocated based on the contribution of each customer class to total fuel costs as determined by

their hourly load profiles and TVA's hourly incremental dispatch costs.

The final rate-related action on August 21, 2015, was the TVA Board's approval of an increase in fiscal year 2016 revenues of approximately \$200 million. This increase equates to an approximate 2.49 percent wholesale rate adjustment.

## Table of Contents

### Power Supply and Cleaner Energy Initiatives

#### General

Power generating facilities operated by TVA at September 30, 2015, included 29 conventional hydroelectric sites, one pumped-storage hydroelectric site, nine coal-fired sites, three nuclear sites, 15 natural gas and/or oil-fired sites, one diesel generator site, 14 solar energy sites, digester gas cofiring capacity at one coal-fired site, biomass cofiring potential (located at coal-fired sites), and one wind energy site, although certain of these facilities were out of service as of September 30, 2015. See Item 2, Properties — Generating Properties — Net Capability for a discussion of these facilities. TVA also acquires power under power purchase agreements of varying durations including short-term contracts of less than 24-hours in duration. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations — Financial Results — Operating Expenses.

TVA intends to balance production capabilities with power supply requirements by promoting the conservation and efficient use of electricity and, when necessary, buying, building, or leasing assets or entering into power purchase agreements. TVA also intends to employ a diverse mix of energy generating sources and is working toward obtaining greater amounts of its power supply from clean (low or zero carbon emitting) resources.

The following charts show TVA's generation and purchased power by generating source as a percentage of all electric power generated and purchased (based on kWh) for the periods indicated:

#### Note

Renewable resources (non-hydro) is less than one percent for all periods shown, and therefore is not represented on the charts above.

#### Coal-Fired

TVA began its coal-fired plant construction program in the 1940s, and its coal-fired units were placed in service between 1951 and 1973. Coal-fired units are either active or inactive. TVA considers units to be in an active state when the unit is generating, available for service, or temporarily unavailable due to equipment failures, inspections, or repairs. As of September 30, 2015, TVA had nine coal-fired plants consisting of 39 active units, accounting for 10,995 MW of summer net capability, and 20 inactive units. Inactive units may be in three categories: retired, mothballed, or inactive reserve. Retired units are unavailable for service and are not expected to return to service in the future. As of September 30, 2015, TVA had 13 retired units: John Sevier Fossil Plant ("John Sevier") Units 1-4, Shawnee Fossil Plant ("Shawnee") Unit 10, and Widows Creek Fossil Plant ("Widows Creek") Units 1-8. Mothballed units are unavailable for service but can be brought back into service after some maintenance with an appropriate amount of notification, typically weeks or months. As of September 30, 2015, TVA had seven mothballed units: Johnsonville Fossil Plant ("Johnsonville") Units 5-10 and Colbert Fossil Plant ("Colbert") Unit 5. Inactive reserve units are unavailable for service but can be brought back into service after some repairs in a relatively short duration of time, typically measured in days. As of September 30, 2015, TVA had no units in inactive reserve. TVA refers to units which are in inactive reserve or mothballed status as idled.

Coal-fired plants have been subject to increasingly stringent regulatory requirements over the last few decades, including those of the Clean Air Act ("CAA") and subsequent laws and regulations. Increasing regulatory costs require consideration of whether or not to make the required capital investments to continue operating these facilities. In April 2011, TVA entered into two agreements (collectively, the "Environmental Agreements") to address a dispute under the CAA. The first agreement is a Federal Facilities Compliance Agreement with the Environmental Protection Agency ("EPA"). The second agreement is with Alabama, Kentucky, North Carolina, Tennessee, and three



environmental advocacy groups: the Sierra Club, National Parks Conservation Association, and Our Children's Earth Foundation. Under the Environmental Agreements, TVA agreed to retire 18 of its 59 coal-fired units by the end of 2017 and was generally absolved from any liability, subject to certain limitations and exceptions, under the New Source Review ("NSR") requirements of the CAA for maintenance, repair, and component replacement projects that were commenced at TVA's coal-fired units prior to the execution of the agreements. Failure to comply with the terms of the Environmental Agreements would subject TVA to penalties stipulated in the agreements.

Edgar Filing: Tennessee Valley Authority - Form 10-K

Table of Contents

TVA is taking the actions necessary to comply with the Environmental Agreements. TVA is confident that it has adequate capacity to meet the needs of its customers after these units are retired. See Natural Gas-Fired Generation and/or Oil-fired below and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Resources — Coal-Fired Units.

The following table summarizes the actions TVA is required to take under the Environmental Agreements, and other coal-fired generation actions taken or to be taken by TVA.

Fossil Plant	Units Impacted	Existing Scrubbers and SCRs <sup>(1)</sup>	Requirements Under Environmental Agreements	Actions Taken by TVA	Actions Planned to be Taken by TVA
Allen	3	SCRs on all three units	- Install scrubbers or retire no later than December 31, 2018	- The Board approved the construction of a gas-fired plant at the current location of the Allen coal-fired site	- Retire Units 1-3 after completion of the gas-fired plant, before December 31, 2018
Bull Run	1	Scrubber and SCRs on unit	- Continuously operate current emission control equipment - Remove from service, control <sup>(2)</sup> , convert <sup>(3)</sup> , or retire Units 1-4 no later than June 30, 2016	- Continuously operate existing emission control equipment	- Continuously operate existing emission control equipment
Colbert	5	SCR on Unit 5	- Remove from service, control <sup>(2)</sup> , or retire Unit 5 no later than December 31, 2015 - Control or retire removed from service units within three years	- Idled Unit 5 in October 1, 2013	- Retire Units 1-4 before April 16, 2016 - Retire Unit 5 no later than December 31, 2015
Cumberland	2	Scrubbers and SCRs on both units	- Continuously operate existing emission control equipment - Control <sup>(2)</sup> , convert <sup>(3)</sup> , or retire all four units no later than December 31, 2017	- Continuously operate existing emission control equipment	- Continuously operate existing emission control equipment
Gallatin	4	None	- Retire two units no later than December 31, 2012 - Remove from service two units no later than December 31, 2012 and control <sup>(2)</sup> , convert <sup>(3)</sup> , or retire those units no later than December 31, 2015	- The Board approved adding scrubbers and SCRs on all four units	- Add scrubbers and SCRs on all four units by December 31, 2017
John Sevier	4	None	- Retire two units no later than December 31, 2012 and control <sup>(2)</sup> , convert <sup>(3)</sup> , or retire those units no later than December 31, 2015	- Retired Units 1 and 2 on December 31, 2012 - Retired Units 3 and 4 on June 25, 2014	
Johnsonville	10	None	- Retire six units no later than December 31, 2015 - Retire four units no later	- Idled Units 7 and 8 effective March 1, 2012 - Idled Units 5 and 6 and	- Retire Units 5-10 by December 31, 2015

Edgar Filing: Tennessee Valley Authority - Form 10-K

			than December 31, 2017	Units 9 and 10 on October 1, 2013	- Retire Units 1-4 by December 31, 2017
Kingston	9	Scrubbers and SCRs on all nine units	- Continuously operate existing emission control equipment - Upgrade scrubbers on Units 1 and 2 no later than December 31, 2012	- Continuously operate existing emission control equipment - The Board approved the construction of a gas-fired plant at the current location of the Paradise coal-fired plant	- Continuously operate existing emission control equipment
Paradise	3	Scrubbers and SCRs on all three units	- Continuously operate emission control equipment on Units 1-3 - Control <sup>(2)</sup> , convert <sup>(3)</sup> , or retire Units 1 and 4 no later than December 31, 2017	- Retired Unit 10 on June 30, 2014	- Retire Units 1 and 2 after completion of the gas-fired plant
Shawnee	10	None	- Retire two of Units 1-6 no later than July 31, 2013 - Retire two of Units 1-6 no later than July 31, 2014	- Retired Units 3 and 5 on July 31, 2013	- Add scrubbers and SCRs on Units 1 and 4 by December 31, 2017
Widows Creek	8	Scrubbers and SCRs on Units 7 and 8	- Retire two of Units 1-6 no later than July 31, 2015 - Continuously operate existing emissions control equipment on Units 7 and 8	- Retired Units 1, 2, 4, and 6 on July 31, 2014 - Retired Units 7 and 8 on September 30, 2015	

Notes

(1) Selective catalytic reduction systems ("SCRs")

(2) If TVA decides to add emission controls to these units, TVA must continuously operate the emission controls once they are installed.

(3) Convert to renewable biomass

After TVA completes the actions described in the above table, TVA anticipates that it will have 7,884 MW of summer net capability of coal-fired generation, a reduction of 6,689 MW from TVA's coal-fired capacity as of September 30, 2010. TVA is

Table of Contents

moving towards a more balanced generation plan with greater reliance on lower-cost and cleaner energy generation technologies. TVA's long-range plans will continue to consider the costs and benefits of significant environmental investments at its remaining coal-fired plants.

## Nuclear

TVA has three nuclear sites consisting of six units in operation and one unit under construction. The units at Browns Ferry Nuclear Plant ("Browns Ferry") are boiling water reactor units, and the units at Sequoyah Nuclear Plant ("Sequoyah") and Watts Bar Nuclear Plant ("Watts Bar") are pressurized water reactor units. Statistics for each of these units are included in the table below.

## TVA Nuclear Power

At September 30, 2015

Nuclear Unit	Status	Nameplate Capacity (MW)	Net Capacity Factor for 2015 (%)	Date of Expiration of Operating License
Sequoyah Unit 1	Operating	1,221	78.9	2040
Sequoyah Unit 2	Operating	1,221	95.7	2041
Browns Ferry Unit 1	Operating	1,264	88.9	2033
Browns Ferry Unit 2	Operating	1,190	88.5	2034
Browns Ferry Unit 3	Operating	1,190	97.2	2036
Watts Bar Unit 1	Operating	1,270	91.4	2035
Watts Bar Unit 2	Under construction	1,220	—	2055

Watts Bar Unit 2. Construction of Watts Bar Unit 2 is continuing in accordance with the schedule and budget expectations approved by the TVA Board in April 2012. The total estimated cost of completion is approximately \$4.5 billion. TVA plans to bring Watts Bar Unit 2 into commercial operation by June 2016. On October 22, 2015, the NRC approved the operating license for Watts Bar Unit 2. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Watts Bar Unit 2 and Note 22 — Legal Proceedings — Administrative Proceedings Regarding Watts Bar Unit 2, which discussions are incorporated herein by reference.

Extended Power Uprate. TVA is undertaking an Extended Power Uprate ("EPU") project at Browns Ferry that is expected to increase the amount of electrical generation capacity of its reactors. The license for each reactor must be modified to allow reactor operation at the higher power level.

Because the license amendment requests ("LARs") submitted by TVA at the beginning of this project have been under review for an extended time due to uprate-related technical issues, the original amendment request was withdrawn and resubmitted in September 2015. When approved, the license amendment will allow all three units at Browns Ferry to increase capacity by 20 percent over original power levels, inclusive of projects previously completed on Units 1, 2, and 3 which resulted in a five percent increase in capacity.

TVA expects to begin implementing the EPU project starting in the spring of 2018 for Unit 3, the fall of 2018 for Unit 1, and the spring of 2019 for Unit 2, and TVA expects to complete the project in 2020. The project not only involves engineering analyses, but modification and replacement of certain existing plant components to enable the units to produce the additional power requested by the license amendments. These improvements will be ongoing in parallel with the NRC's license amendment review process. The project is estimated to cost approximately \$380 million.

Sequoyah License Renewal. On September 28, 2015, the NRC approved renewed licenses for Sequoyah Units 1 and 2, which allow both units to operate for an additional 20 years. The renewed licenses will expire in 2040 for Unit 1

and 2041 for Unit 2.

Bellefonte Unit 1. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Bellefonte Unit 1.

Other Nuclear Initiatives. TVA is preparing an early site permit license application to the NRC to license small modular reactors ("SMR") at TVA's Clinch River Site in Oak Ridge, Tennessee. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Small Modular Reactors.

Other Nuclear Matters. See Fuel Supply — Nuclear Fuel below for a discussion of spent nuclear fuel and low-level radioactive waste, Note 22 — Contingencies for a discussion of TVA's nuclear decommissioning liabilities and the related trust and nuclear insurance, and Note 22 — Legal Proceedings for a discussion of legal and administrative proceedings related to TVA's nuclear program, which discussions are incorporated herein by reference.

## Table of Contents

### Hydroelectric and Other Renewable Energy Resources

**Conventional Hydroelectric Dams.** TVA maintains 29 conventional hydroelectric dams with 109 generating units throughout the Tennessee River system for the production of electricity. At September 30, 2015, these units accounted for 3,796 MW of summer net capability. The amount of electricity that TVA is able to generate from its hydroelectric plants depends on a number of factors, including the amount of precipitation and runoff, initial water levels, and the need for water for competing water management objectives. The amount of electricity generated from these facilities also depends on the availability of TVA's hydroelectric generation plants. When these factors are unfavorable, TVA must increase its reliance on higher cost generation plants and purchased power. In addition, a portion of energy generated by eight U.S. Army Corps of Engineers dams on the Cumberland River contribute to the TVA power system. See Weather and Seasonality below and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Dam Safety Assurance Initiatives.

**Raccoon Mountain Pumped-Storage Plant.** The four units at Raccoon Mountain Pumped-Storage Plant ("Raccoon Mountain") were placed in service during 1978 and 1979. The units, with a total net summer capability of 1,616 MW, are utilized to balance the transmission system as well as generate power. TVA uses electricity generated by its coal-fired and nuclear plants at night to operate pumps that fill the reservoir at Raccoon Mountain. Then, during the day, when power prices are higher, the water is released and the pumps reverse to work as power generating turbines. The cost of generation at Raccoon Mountain, therefore, is linked to the cost of generating plants which are used to power the pumps.

**Hydro Modernization Program.** In 1992, TVA began a Hydro Modernization Program to address reliability issues related to its hydroelectric units. At September 30, 2015, modernization had been completed on 56 conventional hydroelectric units and Raccoon Mountain. The modernization projects resulted in 427 MW of increased capacity from the conventional hydroelectric units, with an average efficiency gain of approximately five percent.

Hydroelectric generation will continue to be an important part of TVA's energy mix. TVA continues to assess its remaining conventional hydroelectric units for opportunities to improve reliability through major maintenance projects. Small capacity gains may be realized on a limited number of these projects, but long-term reliability is the primary focus.

**Other Renewable Energy Resources.** TVA's renewable energy portfolio includes both TVA-owned assets and renewable energy purchases. TVA owns 14 solar sites, capability for digester gas and biomass cofiring, and three wind turbines. At September 30, 2015, the wind turbines were not operational and were not available to provide any summer net capability. The Electric Power Research Institute ("EPRI") is currently undertaking a research project to assess the condition of the three TVA-owned turbines and to evaluate options for their future. Results of the project were expected to be completed in the first quarter of 2015, but work has been delayed. The digester gas cofiring capability is accounted for as coal-fired generation summer net capability. The TVA-owned solar sites provide less than one MW of summer net capability.

### Natural Gas and/or Oil-Fired

Part of TVA's strategy of portfolio diversification and air emissions reductions involves the addition of natural gas-fired plants to its generation fleet. During 2014, TVA's Board approved the construction of two natural gas-fired generation facilities. One facility, with an expected generation capacity of approximately 1,000 MW, will be constructed at the Allen site and a second facility, with an expected generation capacity of approximately 1,000 MW, will be constructed at TVA's Paradise site. Upon completion of each facility, existing coal-fired units at each site will be retired with the exception of Paradise Unit 3, which would continue to be operated. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation

Resources — Natural Gas-Fired Units and Note 22 — Legal Proceedings — National Environmental Policy Act Challenge at Paradise Fossil Plant.

TVA purchased a 700 MW combined-cycle gas plant near Ackerman, Mississippi during the third quarter of 2015. TVA had purchased the electricity generated by the plant since 2008. See Note 6. With the addition of this plant, TVA's natural gas- and oil-fired fleet consisted of 99 combustion turbine power blocks (87 simple-cycle units and 12 combined-cycle power blocks) at September 30, 2015. The 87 simple-cycle units provide a maximum of 5,388 MW of summer net capability. The 12 combined-cycle power blocks provide a maximum of 4,559 MW of summer net capability. Eighty of the simple-cycle units and one combined-cycle power block are fueled by either natural gas or fuel oil. The remaining seven simple-cycle units and the remaining 11 combined-cycle power blocks are fueled by natural gas only. Sixty of the simple-cycle units are currently capable of quick-start response allowing full generation capability in approximately 10 minutes. The economic dispatch of gas-powered plants depends on both the day-to-day price of gas and the price of other available intermediate resources like coal-fired plants. TVA uses simple-cycle units as peaking or backup units.

See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Natural Gas-Fired Units and Item 2, Properties — Generating Properties for a discussion of lease arrangements into which TVA has entered in connection with certain of the combustion turbine units. Because of TVA's strategy of portfolio diversification and reducing air emissions, TVA may decide to make further strategic investments in natural gas-fired facilities in the future by purchase, construction, or lease.

## Table of Contents

### Diesel Generators

At September 30, 2015, TVA had one diesel generator plant consisting of five units, and these facilities accounted for 9 MW of summer net capability.

### Energy Efficiency, Demand Response, and Renewable Energy Programs

During 2015, the TVA Board approved the 2015 Integrated Resource Plan ("IRP") as a guide in making decisions about the energy resources TVA may use to meet future demand for electricity in the Tennessee Valley. The purpose of integrated resource planning is to meet future power demand by identifying the need for generating capacity and determining the best mix of resources to meet the need on a least-cost, system-wide basis. TVA updated its 2011 IRP earlier than planned because several of the assumptions used in its development changed. These include greater availability and lower cost of natural gas and reduced demand for electricity. The 2015 IRP affirms the merits of a diverse portfolio with more natural gas and renewable energy considerations and energy efficiency.

The integrated plan approach considers a broad range of feasible supply-side and demand-side options and assesses them with respect to financial, economic, and environmental impacts. TVA is leading an initiative with the goal of determining the value of distributed resources on the system. Initial efforts are focused on small-scale distributed (rooftop) solar, but the method is general enough to allow for value determination for other distributed options. Work is ongoing, led by a team that includes technical support from EPRI, to develop a methodology to identify site preferences on the distribution systems of the LPCs. This work, along with locational analysis already completed by TVA, will help in placement of utility-scale and distributed solar in support of the IRP recommendations.

Implementing energy efficiency programs will require close cooperation between TVA, local stakeholders, LPCs, and electric customers particularly around deployment of additional energy efficiency resources. The success of energy efficiency depends on end-use customer participation. TVA is primarily a wholesale power provider and the LPCs have the relationship with most end-use customers. TVA will need to work with LPCs and others in the region to design additional delivery mechanisms to achieve the levels of penetration envisioned in the IRP. TVA has a history of successful collaboration around the design and delivery of energy efficiency programs and plans to build on that experience. There are a number of initiatives already underway both internal to TVA and in cooperation with LPCs seeking more effective and innovative program designs, improved performance tracking and budgeting, and enhanced delivery mechanisms.

TVA, in cooperation with its customers, continues to implement a broad portfolio of energy efficiency, demand response, and system load enhancement programs and projects designed to help reduce long-term energy supply costs in the TVA service area through EnergyRight® Solutions ("ERS") programs. TVA realized 412 gigawatt hours ("GWh") and 553 GWh of energy efficiency savings in 2015 and 2014, respectively, through these programs. ERS programs will remain a focus of TVA and are playing an important role in the implementation of the 2015 IRP.

ERS programs continue to be modified and expanded with the completion of the In-Home Energy Evaluation program in 2014. This program included over 85,000 home energy audits and the implementation of the new eScore program which includes a wireless data collection system to more effectively document and process residential evaluation data. TVA launched the eScore design throughout the Tennessee Valley in December 2014 with greater focus on establishing a long-term efficiency improvement relationship with participating homeowners. The ERS programs also include demand reduction efforts such as dispatchable voltage regulation which contribute to TVA's management of peak loads.

TVA's Green Power Switch® ("GPS") program is a voluntary program that supports the production of renewable energy by allowing consumers to purchase it through either the LPCs or from TVA for direct-serve customers. Supply



for the retail portion of the program is sourced from within the TVA service area and sold in 150 kWh blocks. In addition to the standard retail program, TVA continues to test a lower-priced bulk option under GPS that allows for larger commercial and industrial customers located within certain portions of TVA's service area to purchase renewable energy credits ("RECs"), an environmental commodity that represents the environmental attributes of one MWh of renewable energy. Supply for the bulk option is sourced from TVA-contracted renewable energy within the greater Southeastern region. TVA also tested a 100-percent solar option for retail customers, which ended in July 2015. In total, the GPS program provided approximately 206,524 MWh of renewable energy in CY 2014.

In 2013, TVA replaced its Generation Partners ("GP") program with the GPP program for the purpose of encouraging the development of small-scale solar, wind, biomass, and hydroelectric generation systems across the Tennessee Valley that are 50 kilowatts ("kW") or less. The GPP program was not fully subscribed for CY 2015. As of September 30, 2015, the combined participation for the GP and GPP programs comprised more than 93.07 MW of operating generation with 5.18 MW of additional approved capacity in the GPP program that has yet to become operational.

The Renewable Standard Offer ("RSO") program is a voluntary program that began in 2011 to increase the amount of renewable energy generated in TVA's service territory. This program offers pre-set prices, terms, and conditions for power generated by selected, commercially available renewable energy technologies. Solar, wind, and specific biomass projects are included in the program. Projects must be greater than 50 kW, but no greater than 20 MW, in nameplate capacity. TVA

Table of Contents

demonstrated its continued commitment to renewable energy by offering to purchase an additional 100 MW under the RSO program in CY 2015. As of September 30, 2015, TVA had over 74.71 MW of operating generation and an additional 234.65 MW under application or contract not yet operating. RSO projects approved in CY 2015 have a contract term of 20 years and a new price structure that was updated to be compatible with the existing portfolio.

The Solar Solution Initiative ("SSI") is a targeted incentive program that aims to support the existing local solar industry, while also serving as a recruitment tool for new industry in the Tennessee Valley region, by retaining and adding investment and jobs. The program provides incentive payments for mid-sized (greater than 50 kW up to 1 MW) solar projects in TVA's RSO program if the projects use local certified installers in the Tennessee Valley region. During CY 2015, the SSI program was expanded to 20 MW. The program currently has over approximately 9 MW of operating generation. Applications will continue to be accepted and placed on the waiting list until 20 MW is contracted or until the end of the CY 2015 application period in November 2015, whichever occurs first.

## Purchased Power and Other Agreements

TVA acquires power from a variety of power producers through long-term and short-term power purchase agreements as well as through power spot market purchases. During 2015, TVA acquired approximately six percent of the power that it purchased on the power spot market, approximately one percent through short-term power purchase agreements (agreements with a duration of one year or less but longer than the term of spot-market purchases), and approximately 93 percent through long-term power purchase agreements (agreements with a duration of more than one year).

A portion of TVA's capability provided by power purchase agreements is provided under contracts that expire between 2023 and 2036, and the most significant of these contracts are described below.

## Power Purchase Contracts (Excluding Wind Contracts)

At September 30, 2015

Type of Facility	Location	Summer Net Capability (MW)	Contract Termination Date
Lignite	Mississippi	440	2032
Natural gas	Alabama	720	2023
Solar	Alabama	80	2036

Under federal law, TVA is required to purchase energy from qualifying cogenerators and small power producers at TVA's avoided cost of self-generating or purchasing this energy from another source. As of September 30, 2015, there were 24 suppliers, with a combined capacity of 882 MW, whose power TVA purchases under this law.

As of September 30, 2015, TVA was a party to contracts with eight wind farms for the purchase of energy. Energy is currently provided to TVA under all contracts. The first began providing 300 MW (nameplate capacity) from a wind farm in Illinois in May 2010. TVA currently does not purchase the renewable attributes for this energy but has the opportunity to obtain them in the future. The other seven contracts provide TVA with an additional 1,215 MW (nameplate capacity) that include renewable attributes. These wind farms are located in Illinois, Kansas, and Iowa. TVA may work with counterparties to renegotiate or even terminate existing arrangements based on its evaluation of the economics of the contracts given that bringing power from distant locations raises transmission issues and costs.

## Wind Contracts

As of September 30, 2015

Location of Wind Farm	Contracted Nameplate Capacity (in MW)	Date Delivery Began	Contract Termination Date
Illinois	300*	2010	2016
Iowa	198	2010	2031

Edgar Filing: Tennessee Valley Authority - Form 10-K

Iowa	101	2012	2030
Kansas	201	2012	2032
Kansas	165	2013	2032
Illinois	150	2012	2032
Illinois	200	2012	2032
Illinois	200	2013	2033

Note

\*TVA is currently purchasing the energy output of this 300 MW of generation. The owner of the facility retains the renewable attributes, but TVA has the option to purchase the renewable attributes of this generation in the future.

Table of Contents

In addition, TVA has contracted for 27 MW of nameplate renewable energy capacity from 15 wind turbine generators located on Buffalo Mountain near Oak Ridge, Tennessee, 4.8 MW of nameplate capacity from a landfill gas facility near Knoxville, Tennessee, and 4.5 MW of nameplate capacity from a solar farm in Haywood County, Tennessee.

Technology advancements may be needed to address some of the operational issues associated with intermittent renewable energy sources, such as wind and solar, in the future. Regional differences and geographic limitations play a primary role in the types and amount of renewable and clean energy developed across the country. Within the area served by TVA, the most viable renewable resources are hydroelectric, biomass (solid and methane recovery), solar, and wind.

## Fuel Supply

### General

TVA's consumption of various types of fuel depends largely on the demand for electricity by TVA's customers, the availability of various generating units, and the availability and cost of fuel. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Results of Operations — Financial Results — Operating Expenses.

The following table indicates TVA's average fuel expense by generation type for the years indicated:

Fuel Expense Per kWh<sup>(1)(2)</sup>

For the years ended September 30

(cents/kWh)

	2015	2014	2013
Coal	2.84	3.05	3.07
Natural gas and fuel oil	3.25	4.30	3.89
Nuclear	0.50	0.57	0.61
Average fuel cost per kWh net thermal generation from all sources	1.91	2.14	2.15

### Note

(1) Excludes effects of the fuel cost adjustment deferrals and amortization on fuel expense.

(2) In 2012, TVA began allocating a portion of its Financial Trading Program ("FTP") gains and losses to fuel expense. In 2013, the allocation was 70 percent of FTP gains and losses being allocated to fuel expense and 30 percent of FTP gains and losses being allocated to purchased power expense. In 2014 and 2015, the allocation was 80 percent of FTP gains and losses being allocated to fuel expense and 20 percent of FTP gains and losses being allocated to purchased power expense.

### Coal

Coal consumption at TVA's coal-fired generating facilities during 2015 and 2014 was approximately 28 million tons and 31 million tons, respectively. At September 30, 2015, and September 30, 2014, TVA had 32 days and 29 days of system-wide coal supply at full burn rate, respectively, with net book values of \$316 million and \$361 million, respectively.

TVA utilizes both short-term and long-term (longer than one year) coal contracts. During 2015, long-term contracts made up 90 percent of coal purchases and short-term contracts accounted for the remaining 10 percent. TVA plans to continue using contracts of various lengths, terms, and coal quality to meet its expected consumption and inventory requirements. During 2015, TVA purchased coal by basin as follows:

Edgar Filing: Tennessee Valley Authority - Form 10-K

50 percent from the Illinois Basin in Illinois, Indiana and Kentucky;  
43 percent from the Powder River Basin in Wyoming;  
two percent from the Uinta Basin of Utah and Colorado; and  
five percent from the Appalachian Basin of Kentucky, Pennsylvania, Tennessee, Virginia, and West Virginia.

Table of Contents

The following table indicates the delivery methods TVA utilizes for its coal supply:

## Percentage of Coal Supply Delivery Methods

For the years ended September 30

	2015	2014	
Rail	22	% 23	%
Barge	18	% 16	%
Barge and rail combination	50	% 54	%
Truck	10	% 7	%

Generally, total system coal inventories were at or above target levels for most of 2015 due to lower than planned coal-fired generation requirements. However, due to persistent performance issues with certain rail companies, inventories at some facilities fell below targeted levels during 2015.

## Natural Gas and Fuel Oil

During 2015, TVA purchased a significant amount of its natural gas requirements from a variety of suppliers under contracts with terms of up to three years and purchased substantially all of its fuel oil requirements on the spot market. See Note 16 — Derivatives Not Receiving Hedge Accounting Treatment — Derivatives Under FTP. The net book value of TVA's natural gas inventory was \$8 million and \$9 million at September 30, 2015, and 2014, respectively. The net book value of TVA's fuel oil inventory was \$90 million and \$100 million at September 30, 2015, and 2014, respectively. At September 30, 2015, 83 of the combustion turbines that TVA operates were dual-fuel capable, and TVA has fuel oil stored on each of these sites for its dual-fuel combustion turbines as a backup to natural gas.

## Nuclear Fuel

Current Fuel Supply. Converting uranium to nuclear fuel generally involves four stages: the mining and milling of uranium ore to produce uranium concentrates; the conversion of uranium concentrates to uranium hexafluoride gas; the enrichment of uranium hexafluoride; and the fabrication of the enriched uranium hexafluoride into fuel assemblies. For its forward four-year (2016-2019) requirements, TVA currently has 100 percent of its uranium mining and milling, conversion services, enrichment services, and fabrication services requirements either in inventory or under contract. TVA anticipates being able to fill its needs beyond this period by normal contracting processes as market forecasts indicate that the fuel cycle components will be readily available.

TVA, the Department of Energy ("DOE"), and certain nuclear fuel contractors have entered into agreements providing for surplus DOE highly enriched uranium (uranium that is too highly enriched for use in a nuclear power plant) to be blended with other uranium. The enriched uranium that results from this blending process, which is called blended low-enriched uranium ("BLEU"), is fabricated into fuel that can be used in a nuclear power plant. This blended nuclear fuel was first loaded in a Browns Ferry reactor in 2005 and is expected to continue to be used to reload the Browns Ferry reactors through at least 2017. BLEU fuel was loaded into Sequoyah Unit 2 three times but is not expected to be used in the Sequoyah reactors in the future.

Under the terms of an interagency agreement between the DOE and TVA, in exchange for supplying highly enriched uranium materials for processing into usable BLEU fuel for TVA, the DOE participates in the savings generated by TVA's use of this blended nuclear fuel. See Note 1 — Blended Low-Enriched Uranium Program for a more detailed discussion of the BLEU project.

TVA owns all nuclear fuel held for its nuclear plants. At September 30, 2015, and 2014, the net book value of this nuclear fuel was \$1.4 billion and \$1.3 billion, respectively.

Mixed Oxide Nuclear Fuel. Under the DOE Surplus Plutonium Disposition ("SPD") Program, mixed oxide ("MOX") fuel would be fabricated with surplus plutonium and depleted uranium as a replacement for commercial uranium fuel. In February 2010, the DOE and TVA entered into an interagency agreement to evaluate the potential use of MOX fuel in reactors at Browns Ferry and Sequoyah. As part of the evaluation of MOX fuel, TVA participated as a cooperating agency in the DOE's development of the April 2015 final supplemental Environmental Assessment ("EIS") that addresses the potential use of MOX fuel in the TVA reactors. A decision to use MOX fuel is not required or expected for several years. At the earliest, based on the expected production rate of MOX fuel, TVA could start using a small number of MOX fuel assemblies in TVA reactors after 2020. TVA's three criteria for implementing MOX fuel are that it must be environmentally and operationally safe; it must be economical compared to other nuclear fuel used by TVA; and it must be licensed by the NRC for use. If TVA decides to use MOX fuel and the NRC approves its use, some changes in the operation of the reactors are expected and additional equipment may be required. As TVA continues to evaluate fuel options, current fuel supply plans do not include MOX fuel.

Low-Level Radioactive Waste. Low-level radioactive waste ("radwaste") results from certain materials and supplies used in the normal operation of nuclear electrical generation units. TVA sends shipments of radwaste to burial facilities in Clive,

## Table of Contents

Utah and Andrews, Texas. TVA is capable of storing some radwaste at its own facilities for an extended period of time, if necessary.

**Spent Nuclear Fuel.** The Sequoyah dry cask storage facilities have been in use since 2004 and are expected to provide storage capacity through 2026. The Browns Ferry dry cask storage facilities have been in use since 2005. Planned expansion to Browns Ferry independent spent fuel storage installation facilities, including implementation of larger storage casks, is expected to extend storage capacity from 2016 to 2030. TVA began loading used fuel into the new larger casks at Browns Ferry in July 2015. Watts Bar has sufficient storage capacity in its spent fuel pool through 2016. TVA is currently constructing an independent spent fuel installation pad for spent fuel storage at Watts Bar, and cask loading is scheduled in the summer of 2016. To recover the cost of providing long-term, on-site storage for spent nuclear fuel, TVA filed a breach of contract suit against the United States in the Court of Federal Claims in 2001. As a result of this lawsuit and related agreements, TVA has collected approximately \$153 million through 2015.

**Tritium-Related Services.** TVA and the DOE are engaged in a long-term interagency agreement under which TVA will, at the DOE's request, irradiate tritium producing burnable absorber rods to assist the DOE in producing tritium for the Department of Defense ("DOD"). This agreement, which ends in 2035, requires the DOE to reimburse TVA for the costs that TVA incurs in connection with providing irradiation services and to pay TVA an irradiation services fee at a specified rate per tritium-producing rod over the period when irradiation has occurred.

In general, tritium-producing rods are irradiated for one operating cycle, which lasts about 18 months. At the end of the cycle, TVA removes the irradiated rods and loads them into a shipping cask. The DOE then ships them to its tritium-extraction facility. TVA loads a fresh set of tritium-producing rods into the reactor during each refueling outage. Irradiating the tritium-producing rods does not affect TVA's ability to safely operate the reactors to produce electricity.

TVA has provided irradiation services using only Watts Bar Unit 1 since 2003. Although the interagency agreement provides for irradiation services to be performed at Watts Bar and Sequoyah, TVA expects the Watts Bar site to provide sufficient capacity to fulfill this agreement.

## Transmission

The TVA transmission system is one of the largest in North America. TVA's transmission system has 70 interconnections with 12 neighboring electric systems, and delivered nearly 161 billion kWh of electricity to TVA customers in 2015. In carrying out its responsibility for transmission grid reliability in the TVA service area, TVA has operated with 99.999 percent reliability over the last 16 years in delivering electricity to customers. See Item 2, Properties — Transmission Properties.

To the extent that federal law requires access to the TVA transmission system, TVA offers transmission services to others to transmit wholesale power in a manner that is comparable to TVA's own use of the transmission system. TVA has also adopted and operates in accordance with its published transmission Standards of Conduct and separates its transmission functions from its marketing functions.

TVA is subject to federal reliability standards that are set forth by the North American Electric Reliability Corporation ("NERC") and approved by FERC. These standards are designed to maintain the reliability of the bulk electric system, including TVA's generation and transmission system, and include areas such as maintenance, training, operations, planning, modeling, critical infrastructure, physical and cyber security, vegetation management, and facility ratings. TVA recognizes that reliability standards and expectations continue to become more complex and stringent for transmission systems. At present there are approximately 100 mandatory standards subject to enforcement containing approximately 1,200 requirements and sub-requirements that must be met. See Item 7, Management's Discussion and



Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Regulatory Compliance — Transmission Issues.

Transmission upgrades may be required to maintain reliability when some coal-fired units become inactive. TVA invested \$283 million in such upgrades between 2011 and 2015, and estimates future expenditures for transmission upgrades required as a result of inactive coal-fired units to be approximately \$150 million for 2016 to 2020. Upgrades may include enhancements to existing lines and substations or new installations as necessary to provide adequate power transmission capacity, maintain voltage support, and ensure generating plant and transmission system stability.

Table of Contents

## Weather and Seasonality

Weather affects both the demand for and the market prices of electricity. TVA uses degree days to measure the impact of weather on its power operations. Degree days measure the extent to which average temperatures in the five largest cities in TVA's service area vary from 65 degrees Fahrenheit. During 2015, TVA experienced 144 fewer heating degree days, or 3.9 percent less, than in 2014. Conversely, TVA experienced 134 additional cooling degree days, or 7.1 percent more, than in 2014. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Sales of Electricity.

	2015	Percent Change	2014	Percent Change	2013
Combined degree days (normal 5,223)	5,587	(0.2)%	5,597	9.9%	5,095

TVA's power system is generally a dual-peaking system where the demand for electricity peaks during the summer and winter months to meet cooling and heating needs. TVA met an all-time summer peak demand of 33,482 MW on August 16, 2007, at 102 degrees Fahrenheit and an all-time winter peak demand of 33,352 MW on January 24, 2014, at 7.3 degrees Fahrenheit.

Rainfall in the Upper Basin of the Tennessee Valley was 106 percent of normal for 2015 and 97 percent of normal in 2014. Also, runoff was 93 percent of normal in 2015 and 90 percent of normal in 2014. Runoff is the amount of rainfall that is not absorbed by vegetation or the ground and actually reaches the rivers and reservoirs that TVA manages. TVA's conventional hydroelectric generation increased six percent in 2015 as compared to 2014, and decreased 25 percent in 2014 as compared to 2013. Conventional hydroelectric generation was approximately 101 percent of normal in 2015 and 96 percent of normal in 2014.

## Competition

TVA provides electricity in a service area that is largely free of competition from other electric power providers. This service area is defined primarily by two provisions of law: the fence and the anti-cherry-picking provision. The fence limits the region in which TVA or LPCs which distribute TVA power may provide power. The anti-cherry-picking provision limits the ability of others to use the TVA transmission system for the purpose of serving customers within TVA's service area. However, other utilities may use their own transmission lines to serve customers within TVA's service area. There have also been some efforts in the past to erode the protection of the anti-cherry-picking provision, and the protection of the anti-cherry-picking provision could be limited and perhaps eliminated by Congressional legislation at some time in the future.

TVA also faces competition in the form of emerging technologies. Improvements in energy efficiency technologies, growing smart technologies, and other storage technologies may reduce the demand for centrally provided power. The growing interest by customers to generate their own power through distributed generation (including solar power) has the potential to lead to load reduction as well as cause TVA to re-evaluate how it operates the overall grid system to continue to provide highly reliable power at affordable rates. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Distributed Generation.

## Research and Development

TVA makes annual investments in science and technological innovation to help the agency meet future business and operational challenges. Each year TVA's annual research portfolio is updated based on a broad range of operational and industry drivers that help assess key technology gaps, performance issues, or other significant issues that should be addressed through research and development. Core research activities directly support optimization of TVA's

generation and delivery assets, air and water quality, energy utilization, and distributed/clean energy integration.

In the area of energy utilization, TVA evaluates emerging energy efficiency and load management technologies for market and program readiness. TVA's efforts are directed towards demonstrating and validating the performance, reliability, and consumer acceptance of new efficiency technology as well as the value of energy efficiency and load management technologies for the consumer, the LPCs, and TVA. TVA also coordinates activities with EPRI and industry stakeholders related to transportation electrification to support operational fleet requirements and the needs of LPCs to provide guidance on matters of plug-in electric vehicle grid integration and readiness for transportation electrification technologies.

TVA's distributed/clean energy research effort seeks to understand the scope and impact of integrating distributed energy resources ("DER") on operations and business economics and to develop strategies for adapting to the evolving electricity landscape in the Tennessee Valley. Of particular interest is modeling existing and expected solar power deployments in the Tennessee Valley to evaluate the full extent of system impacts of those renewable resources. Initial economic analyses have been conducted to identify the value of DER (particularly solar PV) to both TVA and the LPC system. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Distributed Generation.

## Table of Contents

Investments in TVA's research portfolio are supported through partnership and collaboration with LPCs, EPRI and other research consortiums, the DOE and other federal agencies, national labs, peer utilities, universities, and industry vendors and participation in professional societies.

### Flood Control Activities

The Tennessee River watershed has one of the highest annual rainfall totals of any watershed in the United States, averaging 51 inches per year. During 2015, approximately 56 inches of rain fell in the Tennessee Valley. TVA manages the Tennessee River system in an integrated manner, balancing hydroelectric generation with navigation, flood damage reduction, water quality and supply, and recreation. TVA spills or releases excess water through the tributary and main stem dams in order to reduce flood damage to the Tennessee Valley. TVA typically spills only when all available hydroelectric generating turbines are operating at full capacity and additional water still needs to be moved downstream.

### Environmental Stewardship Activities

TVA's mission includes managing the Tennessee River, its tributaries, and federal lands along the shoreline to provide, among other things, year-round navigation, flood damage reduction, affordable and reliable electricity, and, consistent with these primary purposes, recreational opportunities, adequate water supply, improved water quality, and natural resource protection.

There are 49 dams that comprise TVA's integrated reservoir system. Each dam may also have ancillary structures used to support or assist the main dam's function. The reservoir system provides approximately 800 miles of commercially navigable waterways and also provides significant flood reduction benefits both within the Tennessee River system and downstream on the lower Ohio and Mississippi Rivers. The reservoir system also provides a water supply for residential and industrial customers, as well as cooling water for TVA's coal-fired and nuclear power plants. TVA's Environmental Policy, which was adopted by the TVA Board in 2008, provides objectives for an integrated approach related to providing cleaner, reliable, and affordable energy, supporting sustainable economic growth, and engaging in proactive environmental stewardship. The Environmental Policy provides additional direction in several environmental stewardship areas, including water resource protection and improvements, sustainable land use, and natural resource management. TVA also manages approximately 11,000 miles of shoreline, 650,000 surface acres of reservoir water, and 293,000 acres of reservoir lands for cultural and natural resource protection, recreation, and other purposes.

Strategic guidance for carrying out many of TVA's essential stewardship responsibilities is provided in TVA's Natural Resource Plan ("NRP"). The NRP, issued in August 2011, serves as a 20-year guide for TVA's essential stewardship efforts in managing biological resources (plants, animals, and aquatic species); cultural resources (archaeological sites, historical sites, and artifacts); recreation; water resources; reservoir lands planning; and public engagement. The plan will also guide TVA in achieving the objectives of its Environmental Policy for a more systematic and integrated approach to fulfilling its essential stewardship responsibilities. The NRP was developed with public input including participation from federal and state resource management agencies and the RRSC. Members of the RRSC, established in March 2000, represent public and private stakeholders who benefit from TVA's management of the river system. They provide recommendations on stewardship activities, including reservoir operations, public-land planning and management, water supply, recreation, cultural and natural resource management, infrastructure operation and maintenance, and emergency preparedness. TVA intends to review and update the NRP approximately every five years.

### Economic Development Activities

Since its creation in 1933, TVA has promoted the development of the Tennessee Valley. Economic development, along with energy production and environmental stewardship, is one of the purposes of TVA. TVA works with its LPCs, regional, state, and local agencies, and communities to showcase the advantages available to businesses locating or expanding in TVA's service area. TVA's primary economic development goals are to recruit companies to locate in the Tennessee Valley, encourage expansion of existing business and industry that provide quality jobs, and assist communities in the Tennessee Valley with economic growth opportunities. TVA seeks to meet these goals through a combination of initiatives and partnerships designed to provide financial assistance, technical services, industry expertise, and site-selection assistance to new and existing businesses.

Economic development programs developed by TVA include those which focus on supporting all communities including rural and economically distressed communities across the Tennessee Valley by working in close partnership with other federal and state organizations. TVA also jointly offers incentive programs with participating LPCs. These programs offer competitive incentives to existing and potential power customers in certain business sectors that make multi-year commitments to invest in the Tennessee Valley. In addition to financial support for these programs, TVA offers resources to communities and economic developers in the areas of recruitment, leadership development, industrial product preparedness (sites and buildings), planning, and project assistance.

TVA's economic development efforts helped recruit or expand over 224 companies into the TVA service area during 2015. These companies announced capital investments of over \$7.8 billion and the expected creation and/or retention of over 76,200 jobs.

## Table of Contents

### Regulation

#### Congress

TVA exists pursuant to legislation enacted by Congress and carries on its operations in accordance with this legislation. Congress can enact legislation expanding or reducing TVA's activities, change TVA's structure, and even eliminate TVA. Congress can also enact legislation requiring the sale of some or all of the assets TVA operates or reduce the United States's ownership in TVA. To allow TVA to operate more flexibly than a traditional government agency, Congress exempted TVA from all or parts of certain general federal laws that govern other agencies, such as federal labor relations laws and the laws related to the hiring of federal employees, the procurement of supplies and services, and the acquisition of land. Other federal laws enacted since the creation of TVA that are applicable to other agencies have been made applicable to TVA, including those related to paying employees overtime and protecting the environment, cultural resources, and civil rights.

#### Securities and Exchange Commission

Section 37 of the Securities Exchange Act of 1934 (the "Exchange Act") requires TVA to file with the SEC such periodic, current, and supplementary information, documents, and reports as would be required pursuant to Section 13 of the Exchange Act if TVA were an issuer of a security registered pursuant to Section 12 of the Exchange Act. Section 37 of the Exchange Act exempts TVA from complying with Section 10A(m)(3) of the Exchange Act, which requires each member of a listed issuer's audit committee to be an independent member of the board of directors of the issuer. Since TVA is an agency and instrumentality of the United States, securities issued or guaranteed by TVA are "exempted securities" under the Securities Act of 1933, as amended (the "Securities Act"), and may be offered and sold without registration under the Securities Act. In addition, securities issued or guaranteed by TVA are "exempted securities" and "government securities" under the Exchange Act. TVA is also exempt from Sections 14(a)-(d) and 14(f)-(h) of the Exchange Act (which address proxy solicitations) insofar as those sections relate to securities issued by TVA, and transactions in TVA securities are exempt from rules governing tender offers under Regulation 14E of the Exchange Act. Also, since TVA securities are exempted securities under the Securities Act, TVA is exempt from the Trust Indenture Act of 1939 insofar as it relates to securities issued by TVA, and no independent trustee is required for these securities.

#### Federal Energy Regulatory Commission

Under the FPA, TVA is not a "public utility," a term which generally includes investor-owned utilities. Therefore, TVA is not subject to the full jurisdiction that FERC exercises over public utilities under the FPA. TVA is, however, an "electric utility" and a "transmitting utility" as defined in the FPA and, thus, is directly subject to certain aspects of FERC's jurisdiction.

Under Section 215 of the FPA, TVA must comply with certain standards designed to maintain transmission system reliability. These standards are approved by FERC and enforced by the NERC.

Under Section 210 of the FPA, TVA can be ordered to interconnect its transmission facilities with the electrical facilities of qualified generators and other electric utilities that meet certain requirements. It must be found that the requested interconnection is in the public interest and would encourage conservation of energy or capital, optimize efficiency of facilities or resources, or improve reliability. The requirements of Section 212 of the FPA concerning the terms and conditions of interconnection, including reimbursement of costs, must also be met.

Under Section 211 of the FPA, TVA can be ordered to transmit wholesale power provided that the order (1) does not impair the reliability of the TVA or surrounding systems and (2) meets the applicable requirements of Section 212

concerning terms, conditions, and rates for service. Under Section 211A of the FPA, TVA is subject to FERC review of the transmission rates and the terms and conditions of service that TVA provides others to ensure comparability of treatment of such service with TVA's own use of its transmission system and that the terms and conditions of service are not unduly discriminatory or preferential. The anti-cherry-picking provision of Section 212 of the FPA precludes TVA from being ordered to wheel another supplier's power to a customer if the power would be consumed within TVA's defined service territory.

Sections 221 and 222 of the FPA, applicable to all market participants, including TVA, prohibit (1) reporting false information on the price of electricity sold at wholesale or the availability of transmission capacity to a federal agency with intent to fraudulently affect the data being compiled by the agency and (2) using manipulative or deceptive devices or contrivances in connection with the purchase or sale of power or transmission services subject to FERC's jurisdiction .

Section 206(e) of the FPA provides FERC with authority to order refunds of excessive prices on short-term sales (transactions lasting 31 days or less) by all market participants, including TVA, in price gouging situations if such sales are through an independent system operator or regional transmission organization under a FERC-approved tariff.

Section 220 of the FPA provides FERC with authority to issue regulations requiring the reporting, on a timely basis, of information about the availability and prices of wholesale power and transmission service by all market participants, including TVA.

## Table of Contents

Under Sections 306 and 307 of the FPA, FERC may investigate electric industry practices, including TVA's operations previously mentioned that are subject to FERC's jurisdiction.

Under Sections 316 and 316A of the FPA, FERC has authority to impose civil penalties of up to \$1 million a day for each violation on entities subject to the provisions of Part II of the FPA, which includes the above provisions applicable to TVA. Criminal penalties may also result from such violations.

Finally, while not required to do so, TVA has elected to implement various FERC orders and regulations pertaining to public utilities on a voluntary basis to the extent that they are consistent with TVA's obligations under the TVA Act.

### Nuclear Regulatory Commission

TVA operates its nuclear facilities in a highly regulated environment and is subject to the oversight of the NRC, an independent federal agency which sets the rules that users of radioactive materials must follow. The NRC has broad authority to impose requirements relating to the licensing, operation, and decommissioning of nuclear generating facilities. In addition, if TVA fails to comply with requirements promulgated by the NRC, the NRC has the authority to impose fines, shut down units, or modify, suspend, or revoke TVA's operating licenses.

### Environmental Protection Agency

TVA is subject to regulation by the EPA in a variety of areas, including air quality control, water quality control, and management and disposal of solid and hazardous wastes. See Environmental Matters below.

### States

The Supremacy Clause of the U.S. Constitution prohibits states, without congressional consent, from regulating the manner in which the federal government conducts its activities. As a federal agency, TVA is exempt from regulation, control, and taxation by states except in certain areas where Congress has clearly made TVA subject to state regulation. See Environmental Matters below.

### Other Federal Entities

TVA's activities and records are also subject to review to varying degrees by other federal entities, including the Government Accountability Office and the Office of Management and Budget ("OMB"). There is also an Office of the Inspector General which reviews TVA's activities and records.

### Taxation and Tax Equivalents

TVA is not subject to federal income taxation. In addition, neither TVA nor its property, franchises, or income is subject to taxation by states or their subdivisions. Section 13 of the TVA Act does, however, require TVA to make tax equivalent payments to states and counties in which TVA conducts power operations or in which TVA has acquired power-producing properties previously subject to state and local taxation. The total amount of these payments is five percent of gross revenues from the sale of power during the preceding year excluding sales or deliveries to other federal agencies and off-system sales with other utilities, with a provision for minimum payments under certain circumstances. Except for certain direct payments TVA is required to make to counties, distribution of tax equivalent payments within a state is determined by individual state legislation.

### Environmental Matters



TVA's activities, particularly its power generation activities, are subject to comprehensive regulation under environmental laws and regulations relating to air pollution, water pollution, and management and disposal of solid and hazardous wastes, among other issues.

#### Clean Air Act

The CAA establishes a comprehensive program to protect and improve the nation's air quality and control sources of air pollution. The major CAA programs that affect TVA's power generation activities are described below.

**National Ambient Air Quality Standards.** The CAA requires the EPA to set National Ambient Air Quality Standards ("NAAQS") for certain air pollutants. The EPA has done this for ozone, particulate matter ("PM"), sulfur dioxide ("SO<sub>2</sub>"), nitrogen dioxide ("NO<sub>2</sub>"), carbon monoxide, and lead. Over the years, the EPA has made the NAAQS more stringent. Each state must develop a plan to be approved by the EPA for achieving and maintaining a NAAQS within its borders. These plans impose limits on emissions from pollution sources, including TVA fossil fuel-fired plants. Areas meeting a NAAQS are designated attainment areas. Areas not meeting a NAAQS are designated nonattainment areas, and more stringent requirements apply in those areas. This includes stricter controls on industrial facilities and more complicated permitting processes. TVA fossil-fired plants

Table of Contents

can be impacted by these requirements. As NAAQS become more stringent, utilities are expected to come under increasing pressure to further reduce emissions from their existing fossil fuel generating plants.

On October 1, 2015, the EPA signed a final rule to revise the ozone NAAQS to 70 parts per billion ("ppb") from the current 2008 standard of 75 ppb. The EPA is expected to make final designations in 2017 based on the most recent three years of data. Currently, all areas of the Tennessee Valley meet the 2008 ozone NAAQS. However, impacts of the 2015 ozone NAAQS to TVA and states in TVA's service territory are not possible to determine until EPA makes designations in 2017.

Effective November 4, 2015, the EPA designated the Tennessee portion of the Chattanooga Tennessee-Alabama-Georgia non-attainment area as attainment with respect to the fine particulate matter NAAQS. The Alabama and Georgia portions of this area were designated attainment in December 2014. Knoxville is the only remaining area in the Tennessee Valley region that is designated non-attainment for fine particulate matter. TVA expects that the EPA will designate the Knoxville area attainment in the near future.

New Source Review. The NSR provisions of the CAA require that a permit be obtained prior to constructing new major air emission sources or making major modifications to existing air pollution sources. Major modifications are non-routine physical or operational changes that increase the emissions from an air emission source above specified thresholds. The EPA and environmental groups have been actively pursuing NSR enforcement actions against electric utilities since 1999, alleging that typical plant maintenance activities require NSR permits. If violations are found to have occurred, the EPA or state enforcement authorities could require the installation of new pollution control equipment and could impose fines and penalties. The Environmental Agreements resolved most past NSR claims that TVA faced. The Environmental Agreements did not resolve possible claims based on increases in greenhouse gas ("GHG") and sulfuric acid mist, and these claims could still be pursued in the future.

Cross State Air Pollution Rule. The EPA issued the Cross-State Air Pollution Rule ("CSAPR") in July 2011, requiring several states in the eastern United States to improve air quality by reducing power plant emissions that cross state lines and contribute to pollution in other states relative to the 1997 ozone NAAQS and the 1997 and 2006 fine particle NAAQS. The U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") vacated the rule before implementation began, but the D.C. Circuit's vacatur was reversed by the U.S. Supreme Court in April 2014. Upon further proceedings on remand, the D.C. Circuit granted the EPA's motion to restore CSAPR but shift the compliance deadlines by three years. Under the revised compliance deadlines, Phase I emission reductions in SO<sub>2</sub> and NO<sub>x</sub> became effective on January 1, 2015, and will be followed by Phase II reductions that become effective on January 1, 2017. TVA's significant reductions in SO<sub>2</sub> and NO<sub>x</sub> emissions and planned future reductions will aid in compliance with CSAPR.

On November 16, 2015, the EPA proposed an update to CSAPR to address cross-state pollution relative to the 2008 ozone NAAQS, and also to respond to a July 2015 remand of the CSAPR emission budgets for certain states by the D.C. Circuit. In this update, the EPA proposes to make more stringent the Phase II reductions for NO<sub>x</sub> that become effective on January 1, 2017. The comment period for this proposal will remain open until 45 days after publication of the rule in the Federal Register. TVA is studying this proposal to update CSAPR for potential impacts beyond those identified above for the original CSAPR.

Hazardous Air Pollutants from Industrial, Commercial, and Institutional Boilers. In March 2011, the EPA published a final rule to establish standards for hazardous air pollutants emitted from industrial, commercial, and institutional boilers and process heaters. The final rule, effective in the second quarter of 2014, has had minor impacts on some of TVA's startup and auxiliary boilers at its plants. While all plant startup and auxiliary boilers are expected to be exempt from the emission limits due to their limited use, most boilers will be subject to scheduled tuneups to ensure optimized combustion, and TVA will be required to follow work practice standards in order for the boilers to be exempt from

emission standards.

Mercury and Air Toxic Standards for Electric Utility Units. In April 2012, the EPA promulgated a final rule establishing standards for hazardous air pollutants emitted from steam electric utilities. The rule requires additional controls for hazardous air pollutants, including mercury, non-mercury metals, and acid gases, for some of TVA's coal-fired units by 2015-2016. TVA has chosen to idle or retire some units in lieu of investing in additional controls and may in some cases construct replacement generation. The rule was challenged in court and was upheld on April 15, 2014, by the D.C. Circuit. However, in June 2015, the United States Supreme Court held that the EPA was required to consider cost before deciding whether the regulation of hazardous air pollutants emitted from steam electric utilities was appropriate and necessary. The case has been remanded to the D.C. Circuit. The MATS rule remains in effect until the D.C. Circuit takes further action, and TVA's MATS compliance strategy is thus currently not affected by the Supreme Court's decision.

In October 2015, TVA submitted a request to the EPA for an administrative order under the Clean Air Act that would allow operation of Paradise Units 1 and 2 for a year beyond the MATS compliance date of April 16, 2016. The additional year is necessary to allow these units to continue to operate while the new combined cycle facility is being built. Without the additional year, TVA would be forced to shut down Paradise Units 1 and 2 as of the MATS compliance date, without replacement capacity being available, which would cause adverse consequences to transmission system reliability. TVA expects to retire Paradise Units 1 and 2 once this replacement capacity is available.

## Table of Contents

The Environmental Agreements. See Note 22 — Legal Proceedings — Environmental Agreements for a discussion of the Environmental Agreements, which discussion is incorporated herein by reference.

Acid Rain Program. Congress established the Acid Rain Program to achieve reductions in emissions of SO<sub>2</sub> and NO<sub>x</sub>, the primary causes of acid rain. The program includes a cap-and-trade emission reduction program for SO<sub>2</sub> emissions from power plants. TVA continues to reduce SO<sub>2</sub> and NO<sub>x</sub> emissions from its coal-fired plants, and the SO<sub>2</sub> allowances allocated to TVA under the Acid Rain Program are sufficient to cover the operation of its coal-fired plants. In the TVA service area, the limitations imposed on NO<sub>x</sub> emissions by either the CAIR or CSAPR program are expected to be more stringent than the Acid Rain Program. Therefore, TVA forecasts that the Acid Rain Program will have no impact on TVA other than administrative reporting.

Regional Haze Program. In June 2005, the EPA issued the Clean Air Visibility Rule, amending its CY 1999 regional haze rule, which had established timelines for states to improve visibility in national parks and wilderness areas throughout the United States. Under the amended rule, certain types of older existing sources are required to install best available retrofit technology. To comply with this requirement, certain utilities, including TVA, may have to install additional controls for particulate matter, SO<sub>2</sub>, and NO<sub>x</sub> emissions or agree to lower emission limits at plants equipped with such controls. TVA anticipates that this program will impact only Colbert Unit 5, which was idled in October 2013 and will be retired on or before December 31, 2015.

Opacity. Opacity, or visible emissions, measures the denseness (or color) of power plant plumes and has traditionally been used by states as a means of monitoring good maintenance and operation of particulate control equipment. Under some conditions, retrofitting a unit with additional equipment to better control SO<sub>2</sub> and NO<sub>x</sub> emissions can adversely affect opacity performance, and TVA and other utilities are addressing this issue. The evaluation of a utility's compliance with opacity requirements is coming under increased scrutiny, especially compliance during periods of startup, shutdown, and malfunction. State implementation plans ("SIPs") developed under the CAA typically exclude periods of startup, shutdowns, and malfunctions, but on June 12, 2015, the EPA finalized a rule to eliminate such exclusions. The EPA rule requires states to modify their implementation plans by 2017. These new requirements could reduce flexibility and increase operational costs for TVA's coal-fired plants.

Petition to Expand the Ozone Transport Region. On December 9, 2013, eight of the twelve states that make up the Ozone Transport Region ("OTR") submitted a petition to the EPA requesting that nine states, including Kentucky and Tennessee, be added to the OTR. TVA is unable to predict the outcome of the petition at this time. Should the petition be granted, additional controls may be required on existing electric generating units and other sources in the additional states. New and modified sources would have to have state of the art controls and meet other requirements as well.

## Climate Change

Legislation. Although climate change legislation has failed to progress in the U.S. Congress in past years, there is continuing interest in legislation that could regulate GHG emissions or impose other energy-related restrictions and requirements. If legislation intended to limit GHG emissions or impose other energy policies were to become law, such limitations would likely affect TVA's coal-fired plants and could affect other fossil fuel-fired plants. The costs and impacts of such regulation could be significant for TVA. TVA is unable to predict the likelihood or form of such legislation at this time.

Regulation. On August 3, 2015, the EPA issued the Clean Power Plan, a rule under section 111(d) of the Clean Air Act, to reduce carbon emissions from existing power plants burning fossil fuels. The Clean Power Plan, which is part of President Obama's Climate Action Plan strategy, establishes state-specific emission goals to lower CO<sub>2</sub> emissions from power plants, targeting a 32 percent nationwide reduction in CO<sub>2</sub> emissions from 2005 levels by 2030. The EPA established an "interim goal" that states must meet on average over the eight-year period from 2022-2029 and a "final

goal” that states must meet in 2030 and thereafter based on a two-year average. States must submit to EPA final plans, or “initial plans” with a request for an extension, by September 6, 2016. States that receive an extension must submit final plans by September 6, 2018. The impact of these rules on TVA and the states in TVA’s service territory cannot be determined until the state plans are developed and approved by the EPA, but the impact on TVA could be significant.

On August 3, 2015, the EPA also finalized New Source Performance Standards for carbon emissions from new, modified, and reconstructed power plants. These standards apply to two types of fossil-fuel fired sources: (1) stationary combustion turbines, generally firing natural gas, and (2) electric utility steam generating units, generally firing coal. These standards reflect the degree of emission limitation achievable through the application of the best system of emission reduction ("BSER") that EPA has determined to be adequately demonstrated for each type of source. These standards will apply to the new combined-cycle plants that TVA is constructing at its Allen and Paradise facilities, and TVA believes that its current plans for those plants will enable it to comply with the new standards.

Executive Action. To strengthen the Administration's efforts to increase government-wide energy efficiency and sustainability and implement goals in the President’s June 2013 Climate Action Plan, President Obama issued a memorandum on December 5, 2013, requiring that at least 20 percent of the total amount of energy consumed by each federal agency in any fiscal year, starting in 2020, shall be renewable energy. In addition, on March 25, 2015, President Obama issued Executive

## Table of Contents

Order 13693, which directed each federal agency to ensure that, starting in 2025 and continuing each year thereafter, no less than 30 percent of the total amount of building electric energy shall be renewable electric energy. TVA is on track to achieve the aforementioned 2020 goal of the Presidential Memorandum and the 2025 goal of Executive Order 13693.

On December 18, 2014, the White House Council on Environmental Quality released draft guidance that provides federal agencies with direction on the consideration of the effects of greenhouse gas emissions and climate change when evaluating certain energy and other types of infrastructure projects. The new guidance provides more clarity and consistency for producing and presenting information and provides a plan for agencies to follow during NEPA reviews. This draft guidance updates the previous 2010 release and includes land and resource management actions. TVA does not anticipate significant changes to its NEPA procedures as a result of the draft guidance.

On April 21, 2015, the Administration released the initial installment of its Quadrennial Energy Review ("QER"). In the QER, the Administration announced that the DOE is creating a partnership with 17 energy companies, including TVA, to improve infrastructure resilience against extreme weather and climate change.

International Accords. International agreements and protocols relating to climate change have not been adopted by the United States; accordingly, they would not become binding upon TVA unless and until they are enacted into law.

Litigation. In addition to legislative activity, climate change issues have been the subject of a number of lawsuits, including lawsuits against TVA.

Indirect Consequences of Regulation or Business Trends. Legal, technological, political, and scientific developments regarding climate change may create new opportunities and risks. The potential indirect consequences could include an increase or decrease in electricity demand, increased demand for generation from alternative energy sources, and subsequent impacts to business reputation and public opinion. See Item 1, Business — Power Supply and Cleaner Energy Initiatives.

Physical Impacts of Climate Change. TVA manages the potential effects of climate change on its mission, programs, and operations within its environmental management processes. In June 2014, TVA issued an updated Statement on Climate Change Adaptation and prepared an updated Climate Change Adaptation Action Plan.

Actions Taken by TVA to Reduce GHG Emissions. TVA has reduced GHG emissions from both its generation stations and its operations. As discussed earlier in this Item I, Business, recent TVA Board actions have focused on TVA's plan to balance its coal-fired generation by increasing its nuclear capacity, modernizing its hydroelectric generation system, increasing natural gas-fired units in its generation fleet, installing emission control equipment on certain of its coal-fired units, increasing its purchases of renewable energy, and investing in energy efficiency initiatives to reduce energy use in the Tennessee Valley. Additionally, TVA has invested to reduce energy use in its operations. The combination of more stringent environmental rules, lower natural gas prices, and lower demand for energy across the Tennessee Valley has reduced the utilization of coal-fired generation. These factors have resulted in lower CO<sub>2</sub> emissions.

## Renewable/Clean Energy Standards

Twenty-nine states and the District of Columbia have established enforceable or mandatory requirements for electric utilities to generate a certain amount of electricity from renewable sources. One state within the TVA service area, North Carolina, has a mandatory renewable standard that, while it does not apply directly to TVA, does apply to TVA's LPCs serving retail customers in that state. TVA's policy is to provide compliance assistance to any distributor of TVA power, and TVA is providing assistance to the four LPCs that sell TVA power in North Carolina. Likewise,

the Mississippi Public Service Commission adopted an energy efficiency rule applying to electric and natural gas providers in the state, and TVA is supplying information on participation in ERS efforts to support the covered Mississippi LPCs.

Legislation has been proposed in Congress in the past to establish a national renewable energy standard that could require energy providers, including TVA, to rely more on renewable energy resources. Such legislation has not passed but could be passed in the future.

#### Water Quality Control Developments

**Cooling Water Intake Structures.** On May 19, 2014, the EPA released a final rule under Section 316(b) of the Clean Water Act, relating to cooling water intake structures ("CWIS") for existing power generating facilities. The rule requires changes in cooling water intake structures used to cool the vast majority of coal, gas, and nuclear steam-electric generating plants and a wide range of manufacturing and industrial facilities in the U.S. The final rule requires cooling water intake structures to reflect the best technology available for minimizing adverse environmental impacts, primarily by reducing the amount of fish and shellfish that are impinged or entrained at a cooling water intake structure. These new requirements will potentially affect a number of TVA's fossil- and nuclear-fueled facilities and will likely require capital upgrades to ensure compliance. Most TVA facilities are projected to require retrofit of CWIS with "fish-friendly" screens and fish return systems to achieve compliance with the new rule. The rule will be implemented through permits issued under the National Pollutant Discharge Elimination System ("NPDES") in Section 402 of the Clean Water Act. State agencies administer the NPDES permit program in most states

## Table of Contents

including those in which TVA's facilities are located. In addition, the responsible state agencies must provide all permit applications to the U.S. Fish & Wildlife Service for a 60-day review prior to public notice and an opportunity to comment during the public notice. As a result, the permit may include requirements for additional studies of threatened and endangered species arising from U.S. Fish & Wildlife Service comments and may require additional measures be taken to protect threatened and endangered species and critical habitats directly or indirectly related to the plant cooling water intake. TVA's review of the final rule indicates that the rule offers adequate flexibility for cost-effective compliance. The required compliance timeframe is linked to plant specific NPDES permit renewal cycles (i.e., technology retrofits), and compliance is expected to be in the 2020-2022 timeframe.

**Hydrothermal Discharges.** The EPA and many states are beginning to focus regulatory attention on potential effects of hydrothermal discharges. Many TVA plants have variances from thermal standards under Section 316(a) of the Clean Water Act that may have to be re-justified through new studies. Specific data requirements in the future will be determined based on negotiations between TVA and regulators. If plant thermal limits are made more stringent, TVA may have to install cooling towers at some of its plants and operate installed cooling towers more often. This could result in a substantial cost to TVA.

**Steam-Electric Effluent Guidelines.** On September 30, 2015, the EPA finalized the revision of the Clean Water Act steam electric effluent limitation guidelines. The rule sets strict technology-based effluent limitations that will force technological and operational changes particularly at existing coal-fired facilities. It has the potential to impact long-term investment decisions being made relative to the long-term compliance and operability of TVA coal-fired units. The rule is complex and establishes multiple new effluent limits applicable to existing facilities. The details of the rule are under review to identify key requirements and resultant implications for TVA's operations and to update budgeted estimates for associated projects. Each plant must comply between 2018 and 2023 depending on when a new Clean Water Act permit is needed.

**Groundwater Contamination.** Environmental groups and state regulatory agencies are increasing their attention on groundwater contamination associated with coal combustion residuals ("CCRs") management activities such as ash ponds. Seven of TVA's 10 coal-fired plants are in some level of state regulatory groundwater assessment. Three of those plants (Colbert, Gallatin Fossil Plant ("Gallatin"), and Shawnee) have investigations beyond monitoring and reporting. Five of the seven TVA coal-fired plants (Gallatin, Shawnee, Paradise, Johnsonville, and Widows Creek) have either underground storage tank groundwater monitoring, or groundwater remediation monitoring with state regulatory involvement. As a result of these assessments and increased attention, TVA may have to change how it manages CCRs at some of its plants with associated increases in cost. These costs are not expected to be significant. In addition, TVA's Environmental Research Center facility at Muscle Shoals, Alabama has an active groundwater monitoring program as part of a Resource Conservation and Recovery Act ("RCRA") Corrective Action Permit. See Item 7, Management's Discussion and Analysis of Financial Condition — Key Initiatives and Challenges — Generation Resources — Coal Combustion Residual Facilities.

**Other Clean Water Act Requirements.** As is the case in other industrial sectors, TVA and other utilities are also facing more stringent requirements related to the protection of wetlands, reductions in storm water impacts from construction activities, new water quality criteria for nutrients and other pollutants, new wastewater analytical methods, and regulation of herbicide discharges. In addition, other new environmental regulations related to mountain top mining of coal in the Appalachian region under the Clean Water Act may increase the cost of coal that TVA purchases for its plants.

### Cleanup of Solid and Hazardous Wastes

Liability for releases and cleanup of hazardous substances is imposed under the federal Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), and other federal and parallel state statutes.



In a manner similar to many other industries and power systems, TVA has generated or used hazardous substances over the years.

**TVA Sites.** TVA operations at some of its facilities have resulted in contamination, including coal ash, that TVA is addressing. At September 30, 2015, TVA's estimated liability for cleanup and similar environmental work for those sites for which sufficient information is available to develop a cost estimate is approximately \$23 million and is included in Accounts payable and accrued liabilities and Other long-term liabilities on the Balance Sheet.

**Non-TVA Sites.** TVA is aware of alleged hazardous-substance releases at certain non-TVA areas for which it may have some liability. See Note 22 — Contingencies — Environmental Matters.

**Coal Combustion Residuals.** The EPA published its final rule governing CCRs on April 17, 2015, and the rule became effective October 19, 2015. The rule regulates CCRs as nonhazardous waste under Subtitle D of the Resource Conservation and Recovery Act. While states may adopt the rule's requirements into their regulatory programs, the rule does not require states to adopt the requirements. Although the rule became effective October 19, 2015, certain provisions have later effective dates. TVA's review of the final rule indicates that the rule offers adequate flexibility for compliance. The ongoing TVA wet-to-dry conversion program includes budgeted projects that are expected to address many of the requirements of the CCR rule. TVA is continuing to evaluate the rules and their impact on its operations, including the cost and timing estimates of related projects.

TVA is preparing an environmental impact statement ("EIS") that will address the closure of CCR impoundments at TVA's coal-fired plants. TVA plans to complete the EIS by the third quarter of 2016. See Item 7, Management's Discussion and

Table of Contents

Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources — Coal Combustion Residual Facilities.

Tennessee Department of Environment and Conservation. In August 2015, the Tennessee Department of Environment and Conservation ("TDEC") issued an order that 1) allowed TDEC to oversee TVA's implementation of the EPA's CCR rule and 2) required TVA to assess CCR contamination risks at seven of TVA's eight coal-fired plants in Tennessee and to remediate any unacceptable risks. The TDEC order does not allege that TVA is violating any CCR regulatory requirements nor does it assess TVA penalties. The TDEC order sets out an iterative process through which TVA and TDEC will identify and evaluate any CCR contamination risks and, if necessary, respond to such risks.

Environmental Investments

From the 1970's to 2015, TVA spent approximately \$6.2 billion on controls to reduce emissions from its coal-fired power plants. In addition, TVA has reduced emissions by idling or retiring coal-fired units and relying more on cleaner energy resources including natural gas and nuclear generation.

SO<sub>2</sub> Emissions and NO<sub>x</sub> Emissions. To reduce SO<sub>2</sub> emissions, TVA has installed scrubbers on 17 of its coal-fired units with scrubbers currently under construction on six additional units, and switched to lower-sulfur coal at 24 coal-fired units. To reduce NO<sub>x</sub> emissions, TVA has installed SCRs on 20 coal-fired units with SCRs currently under construction on six additional units, operates selective non-catalytic reduction systems on four units, installed low-NO<sub>x</sub> burners or low-NO<sub>x</sub> combustion systems on 25 units, optimized combustion on five units, and operates NO<sub>x</sub> control equipment year round when units are operating (except during start-up, shutdown, and maintenance periods). TVA has also retired or announced plans to retire 33 of 59 coal-fired units, and the remaining coal-fired units will either have scrubbers and SCRs, be repowered to renewable biomass, or be retired. See Power Supply and Cleaner Energy Initiatives — Coal-Fired above.

Particulate Emissions. To reduce particulate emissions of air pollutants, TVA has equipped all of its coal-fired units with scrubbers, mechanical collectors, electrostatic precipitators, and/or bag houses.

Primarily due to the actions described above, emissions of NO<sub>x</sub> have been reduced by 90 percent below peak 1995 levels and emissions of SO<sub>2</sub> have been reduced by 94 percent below 1977 levels through CY 2014. For CY 2014, TVA's emission of CO<sub>2</sub> from its sources was approximately 77.5 million tons, a 27 percent reduction from 2005 levels. To remain consistent and provide clear information and to align with the EPA's reporting requirements, TVA will continue to report CO<sub>2</sub> emissions on a CY basis.

There could be additional material costs if reductions of GHGs, including CO<sub>2</sub>, are mandated by legislative, regulatory, or judicial actions and if more stringent emission reduction requirements for conventional pollutants are established. These costs cannot reasonably be predicted at this time because of the uncertainty of these actions. A number of emerging EPA regulations establishing more stringent air, water, and waste requirements could result in significant changes in the structure of the U.S. power industry, especially in the eastern half of the country.

TVA currently anticipates spending significant amounts on environmental projects through 2025 including investments in new clean energy generation including natural gas, nuclear, and renewables to reduce TVA's overall environmental footprint. Based on options for certain coal-fired units under the Environmental Agreements and the anticipated results of updates to its IRP in 2015, the amount and timing of expenditures could change. See Power Supply and Cleaner Energy Initiatives — Coal-Fired above and Estimated Required Environmental Expenditures below.



Table of Contents

## Estimated Required Environmental Expenditures

The following table contains information about TVA's current estimates on projects related to environmental laws and regulations.

Air, Water, and Waste Quality Estimated Potential Environmental Expenditures<sup>(1)</sup>

At September 30, 2015

(in millions)

	Estimated Timetable	Total Estimated Expenditures
Site environmental remediation costs <sup>(2)</sup>	2016+	\$23
Coal combustion residual conversion program <sup>(3)</sup>	2016-2022	1,250
Proposed clean air control projects <sup>(4)</sup>	2016-2025	750
Clean Water Act requirements <sup>(5)</sup>	2016-2022	300

## Notes

(1) These estimates are subject to change as additional information becomes available and as laws or regulations change.

(2) Estimated liability for cleanup and similar environmental work for those sites for which sufficient information is available to develop a cost estimate.

(3) Includes costs associated with pond closures, conversion of wet to dry handling, and landfill activities. In April 2015, the EPA finalized rules related to CCRs. TVA is continuing to evaluate the rules and their impact on its operations, including the cost and timing estimates of related projects. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Coal Combustion Residual Facilities.

(4) Includes air quality projects that TVA is currently planning to undertake to comply with existing and proposed air quality regulations, but does not include any projects that may be required to comply with potential GHG regulations or transmission upgrades.

(5) Includes projects that TVA is currently planning to comply with revised rules under the Clean Water Act (i.e., Section 316(b)) and effluent limitation guidelines for steam electric power plants).

## Employees

On September 30, 2015, TVA had 10,918 employees, of whom 3,984 were trades and labor employees. Neither the federal labor relations laws covering most private sector employers nor those covering most federal agencies apply to TVA. However, the TVA Board has a long-standing policy of acknowledging and dealing with recognized representatives of its employees, and that policy is reflected in long-term agreements to recognize the unions (or their successors) that represent TVA employees. Federal law prohibits TVA employees from engaging in strikes against TVA.

## ITEM 1A. RISK FACTORS

The risk factors described below, as well as the other information included in this Annual Report, should be carefully considered. Risks and uncertainties described in these risk factors could cause future results to differ materially from historical results as well as from the results anticipated in forward-looking statements. Although the risk factors described below are the ones that TVA considers significant, additional risk factors that are not presently known to TVA or that TVA presently does not consider significant may also impact TVA's business operations. Although the TVA Board has the authority to set TVA's own rates and may mitigate some risks by increasing rates, there may be instances in which TVA would be unable to partially or completely eliminate one or more of these risks through rate increases over a reasonable period of time or at all. Accordingly, the occurrence of any of the following could have a

material adverse effect on TVA's cash flows, results of operations, and financial condition.

For ease of reference, the risk factors are presented in four categories: (1) regulatory, legislative, and legal risks, (2) operational risks, (3) financial, economic, and market risks, and (4) general business risks.

#### REGULATORY, LEGISLATIVE, AND LEGAL RISKS

New laws, regulations, or administrative orders, or Congressional action or inaction, may negatively affect TVA's cash flows, results of operations, and financial condition, as well as the way TVA conducts its business.

Because TVA is a corporate agency and instrumentality established by federal law, it may be affected by a variety of laws, regulations, and administrative orders that do not affect other electric utilities. For example, Congress may enact legislation that expands or reduces TVA's activities, changes its governance structure, requires TVA to sell some or all of the assets that it operates, reduces or eliminates the United States's ownership of TVA, or even liquidates TVA. Additionally, Congress could act, or fail to take action, on various issues that may result in impacts to TVA, including but not limited to action or inaction related to the national debt ceiling or automatic spending cuts in government programs. Although it is difficult to predict exactly how new laws, regulations, or administrative orders or Congressional action or inaction may impact TVA, some of the possible effects are described below.

Table of Contents

TVA may become subject to additional environmental regulation.

New environmental laws, regulations, and orders may become applicable to TVA or the facilities it operates, and existing environmental laws or regulations may be revised or reinterpreted in a way that adversely affects TVA. Possible areas of future laws or regulations include, but are not limited to, the following:

**Greenhouse gases.** In August 2015, the EPA issued stronger regulations concerning CO<sub>2</sub> emissions from existing power plants burning fossil fuels, and states are required to issue plans to implement these laws or regulations no later than September 6, 2018. Costs to comply with these regulations, as well as future regulations regarding CO<sub>2</sub> and other GHGs, may negatively impact TVA's cash flows, financial position, and results of operations. The cost impact of legislation or regulation cannot be determined at this time.

**Coal combustion residuals.** In April 2015, the EPA issued stronger regulations concerning CCRs, and state governments may impose additional regulations. These laws or regulations may require TVA to make additional capital expenditures, increase operating and maintenance costs, or even cause it to shut down certain facilities. TVA had spent approximately \$760 million as of September 30, 2015 as part of its CCR program. The CCR program consists of TVA's commitment to convert all operational coal plants to dry CCR storage, to close all wet storage facilities, and to meet all applicable state and federal regulations.

**Renewable energy portfolio standards.** TVA is not currently obligated to provide a percentage of the power it sells from renewable sources but may be required to do so in the future. Such developments could require TVA to make significant capital expenditures, increase its purchased power costs, or make changes in how it operates its facilities.

TVA's ability to control or allocate funds could be restricted.

Other federal entities may attempt to restrict TVA's ability to access or control its funds that are on deposit in the TVA account in the U.S. Treasury. For example, should the U.S. Treasury approach its debt ceiling, the U.S. Treasury might, as part of an effort to control federal spending, attempt to require TVA to receive approval before disbursement of funds from TVA's U.S. Treasury account. Additionally, the Office of Management and Budget ("OMB") might, in the event that automatic spending cuts go into effect, attempt to require TVA to reduce its budget by a specified percentage (although the legal applicability of such a situation to TVA would depend upon the wording of the legislation making the automatic spending cuts). Such attempts to restrict TVA's ability to control or allocate funds in those specific types of situations could adversely affect its cash flows, results of operations, and financial condition, its relationships with creditors, vendors, and counterparties, the way it conducts its business, and its reputation.

TVA may lose its protected service territory.

TVA's service area is defined by the fence and protected by the anti-cherry-picking provision. From time to time there have been efforts to erode the protection of the anti-cherry-picking provision, and the protection of the anti-cherry-picking provision could be limited and perhaps eliminated by Congressional legislation at some time in the future. If Congress were to eliminate or reduce the coverage of the anti-cherry-picking provision but retain the fence, TVA could more easily lose customers that it could not replace within its specified service area. The loss of these customers could adversely affect TVA's cash flows, results of operations, and financial condition.

The TVA Board may lose its sole authority to set rates for electricity.

Under the TVA Act, the TVA Board has the sole authority to set the rates that TVA charges for electricity, and these rates are not subject to further review. If the TVA Board loses this authority or if the rates become subject to outside review, there could be material adverse effects on TVA including, but not limited to, the following:

The TVA Board might be unable to set rates at a level sufficient to generate adequate revenues to service TVA's financial obligations, properly operate and maintain its power assets, and provide for reinvestment in its power program; and

• TVA might become subject to additional regulatory oversight that could impede its ability to manage its business.

TVA may lose responsibility for managing the Tennessee River system.

TVA's management of the Tennessee River system is important to effectively operate the power system. TVA's ability to integrate management of the Tennessee River system with power system operations increases power system reliability and reduces costs. Restrictions on how TVA manages the Tennessee River system could negatively affect its operations.

Table of Contents

TVA may lose responsibility for managing real property currently under its control.

TVA's management of real property containing power generation and transmission structures as well as certain reservoir shorelines is important for navigation, flood control, and the effective operation of the power system. Restrictions on or the loss of the authority to manage these properties could negatively affect TVA's operations, change the way it conducts such operations, or increase costs.

Existing laws, regulations, and orders may negatively affect TVA's cash flows, results of operations, and financial condition, as well as the way TVA conducts its business.

TVA is required to comply with comprehensive and complex laws, regulations, and orders. The costs of complying with these laws, regulations, and orders are expected to be substantial, and costs could be significantly more than TVA anticipates, especially in the environmental, nuclear, and transmission reliability areas. To settle the EPA and other claims involving alleged NSR violations, TVA agreed to retire 18 coal-fired units and pay a civil penalty. The cost to install the necessary equipment to comply with existing environmental laws, regulations, settlement agreements, and orders at some other facilities has caused TVA to retire additional units and may render some other facilities uneconomical, which may cause TVA to retire or idle additional facilities. In addition, TVA is required to obtain numerous permits and approvals from governmental agencies that regulate its business, and TVA may be unable to obtain or maintain all required regulatory approvals. If there is a delay in obtaining required regulatory approvals or if TVA fails to obtain or maintain any approvals or to comply with any law, regulation, or order, TVA may have to change how it operates certain assets, may be unable to operate certain assets, or may have to pay fines or penalties if it continues to operate the assets.

Additional NRC requirements may negatively affect TVA's cash flows, results of operations, and financial condition or impact TVA's ability to operate its nuclear facilities.

In response to concerns raised by the Fukushima events, the NRC has required all utilities that own operating nuclear reactors, including TVA, to make substantial modifications at their nuclear facilities. Additionally, the NRC is requiring TVA to evaluate certain of its hydro and nuclear facilities to prevent damage to the nuclear facilities in the event of a catastrophic flood event. Complying with these requirements will require significant capital expenditures and may negatively affect TVA's cash flows, results of operations, financial condition, and reputation. Should TVA be unable to comply with the requirements, TVA may not be able to operate its nuclear facilities as currently contemplated by TVA's generation plans.

TVA is involved in various legal and administrative proceedings whose outcomes may affect TVA's finances and operations.

TVA is involved in various legal and administrative proceedings and is likely to become involved in other legal proceedings in the future in the ordinary course of business, as a result of catastrophic events or otherwise. Although TVA cannot predict the outcome of the individual matters in which TVA is involved or will become involved, the resolution of these matters could require TVA to make expenditures in excess of established reserves and in amounts that could have a material adverse effect on TVA's cash flows, results of operations, and financial condition. Similarly, resolution of any such proceedings may require TVA to change its business practices or procedures and may require TVA to reduce emissions from its coal-fired units, including emissions of GHGs, to a greater extent than TVA had planned.

TVA may be responsible for environmental clean-up activities.



TVA may be responsible for on-site liabilities associated with the environmental condition of facilities or property that TVA has acquired or that TVA operates regardless of when the liabilities arose, whether they are known or unknown, and whether they were caused by TVA, prior owners or operators, or a third party. TVA may also be responsible for off-site liabilities associated with the off-site disposal of waste materials containing hazardous substances or hazardous wastes.

TVA is largely restricted to a defined service area.

If demand for power in TVA's service area decreases, TVA's ability to expand its customer base would be constrained by its inability to pursue new customers outside its service area. Accordingly, the reduction in demand would have to be offset by such actions as reducing TVA's internal costs or increasing rates. Any failure of such measures to fully offset the reduced demand for power may negatively affect TVA's cash flows, results of operations, and financial condition.

Table of Contents

OPERATIONAL RISKS

TVA may incur delays and additional costs in power plant construction and may be unable to obtain necessary regulatory approval.

TVA is completing the construction of Watts Bar Unit 2, constructing two natural gas-fired plants, preserving Bellefonte Unit 1 for possible future completion, scheduling major upgrades to and modernization of current generating plants, and evaluating construction of more generating facilities in the future. These activities involve risks of overruns in the cost of labor and materials as well as risks of schedule delays, which may result from, among other things, changes in laws or regulations, lack of productivity, human error, and the failure to schedule activities properly. In addition, if TVA does not obtain the necessary regulatory approvals or licenses, is otherwise unable to complete the development or construction of a facility, decides to cancel construction of a facility, or incurs delays or cost overruns in connection with constructing a facility, TVA's cash flows, financial condition, and results of operations could be negatively affected. Further, if construction projects are not completed according to specifications, TVA may suffer, among other things, delays in receiving licenses, reduced plant efficiency, reduced transmission system integrity and reliability, and higher operating costs.

TVA may not be able to operate one or more of its nuclear power units.

Should issues develop with TVA's nuclear power units that TVA is unable to correct, TVA might voluntarily shut down one or more units or be ordered to do so by the NRC. Returning the unit(s) into operation could be a lengthy and expensive process, or might not be possible depending on circumstances. In either case, TVA's cash flows, results of operations, financial condition, and reputation may be negatively affected.

Operating nuclear units subjects TVA to nuclear risks and may result in significant costs that adversely affect its cash flows, results of operations, and financial condition.

TVA has six operating nuclear units and anticipates adding a seventh operating unit in CY 2016 when Watts Bar Unit 2 becomes operational. Risks associated with these units include the following:

**Nuclear Risks.** A nuclear incident at one of TVA's facilities could have significant consequences including loss of life, damage to the environment, damage to or loss of the facility, and damage to non-TVA property. Although TVA carries certain types of nuclear insurance, the amount that TVA is required to pay in connection with a nuclear incident could significantly exceed the amount of coverage provided by insurance. Any nuclear incident in the United States, even at a facility that is not operated by or licensed to TVA, has the potential to impact TVA adversely by obligating TVA to pay up to \$114 million per year and a total of \$764 million per nuclear incident under the Price-Anderson Act. These potential liabilities will increase to \$133 million per year and a total of \$891 million per nuclear incident once Watts Bar Unit 2 becomes operational. Any such nuclear incident could also negatively affect TVA by, among other things, obligating TVA to pay retrospective insurance premiums, reducing the availability and affordability of insurance, increasing the costs of operating nuclear units, or leading to increased regulation or restriction on the construction, operation, and decommissioning of nuclear facilities. Moreover, Congress could impose revenue-raising measures on the nuclear industry to pay claims exceeding the limit for a single incident under the Price-Anderson Act. Further, the availability or price of insurance may be impacted by TVA's acts or omissions, such as a failure to properly maintain a facility, or events outside of TVA's control, such as an equipment manufacturer's inability to meet a guideline, specification, or requirement.

**Decommissioning Costs.** TVA maintains a Nuclear Decommissioning Trust ("NDT") for the purpose of providing funds to decommission its nuclear facilities. The NDT is invested in securities generally designed to achieve a return in line with overall equity market performance. TVA might have to make unplanned contributions to the NDT if,

among other things:

• The value of the investments in the NDT declines significantly, as it did during the 2008-2009 recession, or the investments fail to achieve the assumed real rate of return;

• The decommissioning funding requirements are changed by law or regulation;

• The assumed real rate-of-return on plan assets, which is currently five percent, is lowered by the TVA Board or is overly optimistic;

• The actual costs of decommissioning are more than planned;

• Changes in technology and experience related to decommissioning cause decommissioning cost estimates to increase significantly;

• TVA is required to decommission a nuclear plant sooner than it anticipates; or

34

---

Table of Contents

The NRC guidelines for calculating the minimum amount of funds necessary for decommissioning activities are significantly changed.

If TVA makes additional contributions to the NDT, the contributions may negatively affect TVA's cash flows, results of operations, and financial condition.

**Increased Regulation.** The NRC has broad authority to adopt requirements related to the licensing, operating, and decommissioning of nuclear generation facilities that can result in significant restrictions or requirements on TVA. If the NRC modifies existing requirements or adopts new requirements, TVA may be required to make substantial capital expenditures at its nuclear plants or make substantial contributions to the NDT. In addition, if TVA fails to comply with requirements promulgated by the NRC, the NRC has the authority to impose fines, shut down units, or modify, suspend, or revoke TVA's operating licenses.

TVA's facilities and information infrastructure may not operate as planned due to physical and cyber threats to TVA's security.

TVA has an extensive generation and transmission system and supporting infrastructure that includes both physical and cyber assets. Potential targets include, among other things, TVA's generation facilities, transmission infrastructure such as substations and towers, information technology systems, and network infrastructure. Because of TVA's status as a governmental corporation and TVA's role as predominately the sole power provider for its service territory, TVA may be targeted by individuals, groups, or nation states for physical or cyber attacks.

**Physical Attacks.** TVA's operations are located over wide areas and are protected by automated monitoring systems, local law enforcement, TVA employees, or a combination thereof. However, it may not be possible to effectively deter or prevent attacks, including vandalism and more significant acts, at all TVA facilities. Such attacks could pose health and safety risks, significantly disable or destroy TVA assets, interfere with TVA's operations, result in additional regulatory or security requirements, and negatively affect TVA's cash flows, results of operations, and financial condition.

**Cyber Attacks.** TVA's operations are extensively computerized. A failure or breach of its information technology assets, whether caused by a cyber attack or otherwise, could:

Significantly disrupt operations, including the generation and transmission of electricity;

Negatively affect TVA's cash flows, results of operations, and financial condition;

Pose health and safety risks; and

Result in the compromise of sensitive data.

The theft, damage, or improper disclosure of sensitive data may also subject TVA to penalties and claims from third parties.

TVA's generation and transmission assets or their supporting infrastructure may not operate as planned.

Many of TVA's generation and transmission assets and their supporting infrastructure have been operated more often, or for more prolonged periods, than originally intended. Many of TVA's coal-fired units, for example, have been operating since the 1950s and have been in nearly constant service since they were completed. Additionally, certain of

Edgar Filing: Tennessee Valley Authority - Form 10-K

TVA's newer assets have experienced operating issues and manufacturing defects in essential equipment. If TVA's generation and transmission assets or their supporting infrastructure fail to operate as planned, if necessary repairs or upgrades are delayed or cannot be completed as quickly as anticipated, or if necessary spare parts are unavailable, TVA, among other things:

- ♣May have to invest a significant amount of resources to repair or replace the assets or the supporting infrastructure;
- ♣May have to remediate collateral damage caused by a failure of the assets or the supporting infrastructure;
- ♣May not be able to maintain the integrity or reliability of the transmission system at normal levels;
- ♣May have to operate less economical sources of power;
- ♣May have to purchase replacement power on the open market at prices greater than its generation costs;
- ♣May be required to invest substantially to meet more stringent reliability standards;

Table of Contents

• May be unable to maintain insurance on affected facilities, or be required to pay higher premiums for coverage, unless necessary repairs or upgrades are made;

- May be unable to operate the assets for a significant period of time;  
and

• May not be able to meet its contractual obligations to deliver power.

In addition, the failure of TVA's generation and transmission assets or their supporting infrastructure to perform as planned may cause health, safety, or environmental problems and may even result in events such as the failure of a dam, the failure of a containment pond, or an incident at a coal-fired, gas-fired, or nuclear facility. Any of these potential outcomes may negatively affect TVA's cash flows, results of operations, financial condition, and reputation.

TVA's safety program may not prevent accidents that could, among other things, impact TVA's operations or financial condition.

TVA's safety program, no matter how well designed and operated, may not completely prevent accidents. In addition to the potential human cost of accidents, which could include injury to employees or members of the public, significant accidents could impact TVA's ability to carry out operations, cause it to shut down facilities, subject it to additional regulatory scrutiny, damage its reputation, interfere with its ability to attract or retain a skilled workforce, and harm its financial condition.

Weather conditions may influence TVA's ability to supply power and its customers' demands for power.

Extreme temperatures may increase the demand for power and require TVA to purchase power at high prices to meet the demand from customers, while unusually mild weather may result in decreased demand for power and lead to reduced electricity sales. Also, in periods of below normal rainfall or drought, TVA's low-cost hydroelectric generation may be reduced, requiring TVA to purchase power or use more costly means of producing power. Additionally, periods of either high or low levels of rainfall may reduce river levels and impede river traffic, impacting barge deliveries of critical items such as coal and equipment for power facilities. Furthermore, high river water temperatures in the summer may limit TVA's ability to use water from the Tennessee or Cumberland River systems for cooling at certain of TVA's generating facilities, thereby limiting its ability to operate these generating facilities.

Catastrophic events may negatively affect TVA's cash flows, results of operations, and financial condition.

TVA's cash flows, results of operations, and financial condition may be adversely affected, either directly or indirectly, by catastrophic events such as fires, earthquakes, explosions, solar events, electromagnetic pulses, droughts, floods, tornadoes, wars, national emergencies, terrorist activities, pandemics, and other similar destructive or disruptive events. These events, the frequency and severity of which are unpredictable, may, among other things, lead to legislative or regulatory changes that affect the construction, operation, and decommissioning of nuclear units and the storage of spent fuel; limit or disrupt TVA's ability to generate and transmit power; limit or disrupt TVA's ability to provide flood control and river management; reduce the demand for power; disrupt fuel or other supplies; require TVA to produce additional tritium; lead to an economic downturn; require TVA to make substantial capital investments for repairs, improvements, or modifications; and create instability in the financial markets. If costs to construct nuclear units significantly increase or if public opposition to nuclear power makes operating such plants less feasible as a result of any of these events, TVA may be forced to forego any future construction at its nuclear facilities or shut them down. This would make it substantially more difficult for TVA to obtain greater amounts of its power

supply from low or zero carbon emitting resources and to replace its generation capacity when faced with retiring or idling certain coal-fired units. Additionally, some studies have predicted that climate change may cause catastrophic events, such as droughts and floods, to occur more frequently in the Tennessee Valley region, which could adversely impact TVA.

TVA's service reliability could be affected by problems at other utilities or at TVA facilities, or by the increase in intermittent sources of power.

TVA's transmission facilities are directly interconnected with the transmission facilities of neighboring utilities and are thus part of the larger interstate power transmission grid. Certain of TVA's generation and transmission assets are critical to maintaining reliability of the transmission system. Additionally, TVA uses certain assets that belong to third parties to transmit power and maintain reliability. Accordingly, problems at other utilities as well as at TVA's facilities may cause interruptions in TVA's service to TVA's customers, increase congestion on the transmission grid, or reduce service reliability. In addition, the increasing contribution of intermittent sources of power, such as wind and solar, may place additional strain on TVA's system as well as on surrounding systems. If TVA suffers a service interruption, increased congestion, or reduced service reliability, TVA's cash flows, results of operations, financial condition, and reputation may be negatively affected.

## Table of Contents

TVA's supplies of fuel, purchased power, or other critical items may be disrupted.

TVA purchases coal, uranium, natural gas, fuel oil, and electricity from a number of suppliers. Additionally, TVA purchases other items, such as anhydrous ammonia, liquid oxygen, or replacement parts that are critical to the operation of certain generation assets. Disruption in the acquisition or delivery of fuel, purchased power, or other critical supplies may result from a variety of physical and commercial events, political developments, legal actions, or environmental regulations affecting TVA's suppliers as well as from transportation or transmission constraints. If one of TVA's suppliers fails to perform under the terms of its contract with TVA, TVA might have to purchase replacement fuel, power, or other critical supplies, perhaps at a significantly higher price than TVA is entitled to pay under the contract. In some circumstances, TVA may not be able to recover this difference from the supplier. In addition, any disruption of TVA's supplies could require TVA to operate higher cost generation assets, thereby adversely affecting TVA's cash flows, results of operations, and financial condition. Moreover, if TVA is unable to acquire enough replacement fuel, power, or supplies, or does not have sufficient reserves to offset the loss, TVA may not be able to operate certain assets or provide enough power to meet demand, resulting in power curtailments, brownouts, or even blackouts.

Events which affect the supply of water in the Tennessee River system and Cumberland River system may interfere with TVA's ability to generate power.

An inadequate supply of water in the Tennessee River system and Cumberland River system could negatively impact TVA's cash flows, results of operations, and financial condition by reducing generation not only at TVA's hydroelectric plants but also at its coal-fired and nuclear plants, which depend on water from the river systems near which they are located for cooling and for use in boilers where water is converted into steam to drive turbines. An inadequate supply of water could result, among other things, from periods of low rainfall or drought, the withdrawal of water from the river systems by governmental entities or others, and incidents affecting bodies of water not managed by TVA. While TVA manages the Tennessee River and a large portion of its tributary system to provide much of the water necessary for the operation of its power plants, the U.S. Army Corps of Engineers operates and manages other bodies of water upon which some of TVA's facilities rely. Events at these bodies of water or their associated hydroelectric facilities may interfere with the flow of water and may result in TVA's having insufficient water to meet the needs of its plants. If TVA has insufficient water to meet the needs of its plants, TVA may be required to reduce generation at its affected facilities to levels compatible with the available supply of water.

TVA's determination of the appropriate mix of generation assets may change.

TVA has determined that its power generation assets should consist of a mixture of nuclear, coal-fired, natural gas-fired, and renewable power sources, including hydroelectric. In making this determination, TVA took various factors into consideration, including the anticipated availability of its nuclear units, the availability of non-nuclear facilities, the forecasted cost of natural gas and coal, the forecasted demand for electricity, and environmental compliance including the expense of adding air pollution controls to its coal-fired units. If any of these assumptions materially change or are overtaken by subsequent events, then TVA's generation mix may not adequately address its operational needs. Resolving such a situation may require capital expenditures or additional power purchases, and TVA's cash flows, results of operations, financial condition, and reputation may be negatively affected. Additionally, TVA is taking measures to maintain flexibility by keeping certain facilities and sites available as generation options. There are costs associated with maintaining these options that could impact TVA's cash flows, results of operation, financial condition, and reputation.

## FINANCIAL, ECONOMIC, AND MARKET RISKS

TVA's cost reduction efforts may not be successful.



TVA has been working to reduce operating expenses to offset reductions in power demand. The failure to achieve or maintain cost reductions could adversely affect TVA's rates, reputation, cash flows, results of operations, and financial condition.

TVA may have to make significant contributions in the future to fund its pension plans.

At September 30, 2015, TVA's qualified pension plan had assets of \$6.8 billion compared to liabilities of \$12.8 billion. The qualified plan is mature with approximately 23,700 retirees and beneficiaries receiving benefits of approximately \$690 million per year. The costs of providing pension benefits depend upon a number of factors, including, but not limited to, provisions of the pension plans; changing experience and assumptions related to terminations, retirements, and mortality; rates of increase in compensation levels; rates of return on plan assets; discount rates used in determining future benefit obligations and required funding levels; optional forms of benefit payments selected; future government regulation; and levels of contributions made to the plans.

Any of these factors or any number of these factors could keep at high levels, or even increase, the costs of providing pension benefits and require TVA to make significant contributions to the pension plans. Unfavorable financial market

Table of Contents

conditions may result in lower expected rates of return on plan assets, loss in value of the investments, and lower discount rates used in determining future benefit obligations. These changes would negatively impact the funded status of the plans. Additional contributions to the plans and absorption of additional costs would negatively affect TVA's cash flows, results of operations, and financial condition.

Approaching or reaching TVA's debt ceiling could limit TVA's ability to carry out its business. Additionally, TVA's debt ceiling could be made more restrictive.

The TVA Act provides that TVA can issue Bonds in an amount not to exceed \$30.0 billion outstanding at any time. At September 30, 2015, TVA had \$23.9 billion of Bonds outstanding (not including noncash items of foreign currency exchange gain of \$21 million and net discount on sale of Bonds of \$108 million).

Approaching or reaching the debt ceiling may adversely affect TVA's business by limiting TVA's ability to access capital markets and increasing the amount of debt TVA must service. Also, Congress may lower TVA's debt ceiling or broaden the types of financial instruments that are covered by the ceiling. Either of these scenarios may also restrict TVA's ability to raise capital to maintain power program assets, to construct additional generation facilities, to purchase power under long-term power purchase agreements, or to meet regulatory requirements. In addition, approaching or reaching the debt ceiling may lead to increased legislative or regulatory oversight of TVA's activities and could lead to negative rating actions by credit rating agencies.

TVA may be unable to meet its current cash requirements if TVA's access to the debt markets is limited.

TVA uses cash provided by operations together with proceeds from power program financings and other financing arrangements to fund its current cash requirements. It is critical that TVA continues to have access to the debt markets in order to meet its cash requirements. The importance of having access to the debt markets is underscored by the fact that TVA, unlike many utilities, relies almost entirely on debt capital since, as a governmental instrumentality, TVA cannot issue equity securities.

TVA's credit ratings may be impacted by Congressional actions or by a downgrade of the United States's sovereign credit ratings.

TVA's current credit ratings are not based solely on its underlying business or financial condition but are based to a large extent on the legislation that defines TVA's business structure. Key characteristics of TVA's business defined by legislation include (1) the TVA Board's ratemaking authority, (2) the current competitive environment, which is defined by the fence and the anti-cherry-picking provision, and (3) TVA's status as a corporate agency and instrumentality of the United States. If Congress takes any action that effectively alters any of these characteristics, TVA's credit ratings could be downgraded.

Although TVA Bonds are not obligations of the United States, TVA, as a corporate agency and instrumentality of the United States, may be impacted if the sovereign credit ratings of the United States are downgraded. Such a downgrade of the United States's sovereign credit ratings could, among other things, result in a downgrade of TVA's credit rating. Additionally, the economy could be negatively impacted resulting in reduced demand for electricity, an increase in borrowing costs, and an increase in the cost of fuels, supplies, and other materials required for TVA's operations.

TVA, together with owners of TVA securities, may be impacted by downgrades of TVA's credit ratings.

Downgrades of TVA's credit ratings may have material adverse effects on TVA's cash flows, results of operations, and financial condition as well as on investors in TVA securities. Among other things, a downgrade may have the following effects:

A downgrade could increase TVA's interest expense by increasing the interest rates that TVA pays on new securities that it issues. An increase in TVA's interest expense may reduce the amount of cash available for other purposes, which may result in the need to increase borrowings, to reduce other expenses or capital investments, or to increase power rates.

A downgrade may result in TVA's having to post collateral under certain physical and financial contracts that contain ratings triggers.

A downgrade below a contractual threshold may prevent TVA from borrowing under three credit facilities totaling \$2.5 billion or posting letters of credit as collateral under these facilities. At September 30, 2015, there were \$1.1 billion of letters of credit outstanding under these facilities. If TVA were no longer able to post letters of credit as collateral, TVA's liquidity would be negatively affected, for TVA would likely have to post cash as collateral instead of letters of credit.

Table of Contents

A downgrade may lower the price of TVA securities in the secondary market, thereby hurting investors who sell TVA securities after the downgrade and diminishing the attractiveness and marketability of TVA securities.

TVA's assumptions about the future may be inaccurate.

TVA uses certain assumptions in order to develop its plans for the future. Such assumptions include economic forecasts, anticipated energy and commodity prices, cost estimates, construction schedules, power demand forecasts, the appropriate generation mix to meet demand, and potential regulatory environments. Should these assumptions be inaccurate, or be superseded by subsequent events, TVA's plans may not be effective in achieving the intended results, which could negatively affect cash flows, results of operations, and financial condition, as well as TVA's ability to meet electricity demand and the way TVA conducts its business.

Demand for electricity may be significantly reduced, negatively affecting TVA's cash flows, results of operations, and financial condition.

Some of the factors that could reduce the demand for electricity include, but are not limited to, the following:

**Economic downturns.** Renewed economic downturns in TVA's service area or other parts of the United States could reduce overall demand for power and thus reduce TVA's power sales and cash flows, especially if TVA's industrial customers reduce their operations and thus their consumption of power.

**Loss of customers.** TVA could lose customers if those customers' operations leave TVA's service territory, choose another utility where available, or pursue self-generation to meet some or all of their power needs. The loss of customers could have a material adverse effect on TVA's cash flows, results of operations, or financial condition, and could result in higher rates, especially because of the difficulty in replacing customers on account of the fence.

**Change in technology.** Research and development activities are ongoing to improve existing and alternative technologies to produce electricity, including gas turbines, wind turbines, fuel cells, microturbines, solar cells, and distributed generation devices. It is possible that advances in these or other alternative technologies could reduce the costs of electricity production from alternative technologies to a level that will enable these technologies to compete effectively with traditional power plants like TVA's. To the extent these technologies become a more cost-effective option for certain customers, TVA's sales to these customers could be reduced, negatively affecting TVA's cash flows, results of operations, and financial condition.

**Increased Energy Efficiency and Conservation.** Increasingly efficient use of energy as well as conservation efforts may reduce the demand for power. Such a reduction could have a significant impact on TVA, especially if it occurs during an economic downturn or a period of slow economic growth, could negatively affect TVA's cash flows, results of operations, and financial condition, and could result in higher rates and changes to how TVA operates.

TVA is subject to a variety of market risks that may negatively affect TVA's cash flows, results of operations, and financial condition.

TVA is subject to a variety of market risks, including, but not limited to, commodity price risk, investment price risk, interest rate risk, counterparty credit and performance risk, and currency exchange rate risk.

**Commodity Price Risk.** If prices of commodities critical to operations, including coal, uranium, natural gas, fuel oil, crude oil, construction materials, or emission allowances, increase, TVA's rates may increase.

**Investment Price Risk.** TVA is exposed to investment price risk in the NDT, its Asset Retirement Trust ("ART"), its Supplemental Executive Retirement Plan ("SERP"), its Long-Term Deferred Compensation Plan ("LTDCP"), and its pension plan. If the value of the investments held in the NDT or the pension fund either decreases or fails to increase in accordance with assumed rates of return, TVA may be required to make substantial contributions to these funds. In addition, although TVA is not required to make contributions to the ART, it may choose to do so, particularly if TVA's estimates of its non-nuclear asset retirement obligation liabilities increase. TVA may also choose to make contributions to the SERP and LTDCP from time to time.

**Interest Rate Risk.** Changes in interest rates may increase the amount of interest that TVA pays on new Bonds that it issues, decrease the return that TVA receives on short-term investments, decrease the value of the investments in the NDT, the ART, and TVA's pension fund, increase the amount of collateral that TVA is required to post in connection with certain of its derivative transactions, and increase the losses on the mark-to-market valuation of certain derivative transactions into which TVA has entered.

**Counterparty Credit and Performance Risk.** TVA is exposed to the risk that its counterparties will not be able to perform their contractual obligations. If TVA's counterparties fail to perform their obligations, TVA's cash flows, results of operations, and financial condition may be adversely affected. In addition, the failure of a counterparty to

Table of Contents

perform may make it difficult for TVA to perform its obligations, particularly if the counterparty is a supplier of electricity or fuel.

**Currency Exchange Rate Risk.** Over the next several years, TVA plans to spend a significant amount of capital on clean air projects, capacity expansion, and other projects. A portion of this amount may be spent on contracts that are denominated in one or more foreign currencies. The value of the U.S. dollar compared with other currencies has fluctuated widely in recent years, and, if not effectively managed, foreign currency exposure could negatively impact TVA's cash flows, results of operations, and financial condition.

TVA's ability to use derivatives to hedge certain risks may be limited.

Under the Dodd-Frank Wall Street Reform and Consumer Protection Act and its implementing regulations, TVA is subject to recordkeeping, reporting, and reconciliation requirements related to its derivative transactions. In addition, depending on how regulatory agencies interpret and implement the provisions of this act, TVA's hedging costs may increase, and TVA may have to post additional collateral and margin in connection with its derivative transactions. These occurrences may, among other things, negatively affect TVA's cash flows and cause TVA to reduce or modify its hedging activities, which could increase the risks to which TVA is exposed.

The market for TVA securities might be limited.

Although many TVA Bonds are listed on stock exchanges, there can be no assurances that any market will develop or continue to exist for any Bonds. Additionally, no assurances can be made as to the ability of the holders to sell their Bonds or as to the price at which holders will be able to sell their Bonds. Future trading prices of Bonds will depend on many factors, including prevailing interest rates, the then-current ratings assigned to the Bonds, the amount of Bonds outstanding, the time remaining until the maturity of the Bonds, the redemption features of the Bonds, the market for similar securities, and the level, direction, and volatility of interest rates generally, as well as the liquidity of the markets for those securities.

If a particular series of Bonds is offered through underwriters, those underwriters may attempt to make a market in the Bonds. Dealers other than underwriters may also make a market in TVA securities. However, the underwriters and dealers are not obligated to make a market in any TVA securities and may terminate any market-making activities at any time without notice.

In addition, legal limitations may affect the ability of banks and others to invest in Bonds. For example, national banks may purchase TVA Bonds for their own accounts in an amount not to exceed 10 percent of unimpaired capital and surplus. Also, TVA Bonds are "obligations of a corporation which is an instrumentality of the United States" within the meaning of Section 7701(a)(19)(C)(ii) of the Internal Revenue Code for purposes of the 60 percent of assets limitation applicable to U.S. building and loan associations.

TVA's financial control system cannot guarantee that all control issues and instances of fraud or errors will be detected.

No financial control system, no matter how well designed and operated, can provide absolute assurance that the objectives of the control system are met, and no evaluation of financial controls can provide absolute assurance that all control issues and instances of fraud or errors can be detected. The design of any system of financial controls is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote.

Payment of principal and interest on TVA securities is not guaranteed by the United States.

Although TVA is a corporate agency and instrumentality of the United States government, TVA securities are not backed by the full faith and credit of the United States. If TVA were to experience extreme financial difficulty and were unable to make payments of principal or interest on its Bonds, the federal government would not be legally obligated to prevent TVA from defaulting on its obligations. Principal and interest on TVA securities are payable solely from TVA's net power proceeds. Net power proceeds are the remainder of TVA's gross power revenues after deducting the costs of operating, maintaining, and administering its power properties and payments to states and counties in lieu of taxes, but before deducting depreciation accruals or other charges representing the amortization of capital expenditures, plus the net proceeds from the sale or other disposition of any power facility or interest therein.

#### GENERAL BUSINESS RISKS

TVA's organizational transformation efforts may not be successful.

TVA has been working to improve its corporate culture. The failure to achieve or maintain improvements in TVA's corporate culture may contribute to the likelihood of incidents such as significant environmental events, delays in

## Table of Contents

construction projects, or other operational or financial challenges that could adversely affect TVA's cash flows, results of operations, and financial condition as well as TVA's ability to attract or retain a skilled workforce.

TVA's reputation may be negatively impacted.

As with any company, TVA's reputation is a vital element of its ability to effectively conduct its business. TVA's reputation could be harmed by a variety of factors, including the failure of a generating asset or supporting infrastructure, significant delays in construction projects, acts or omissions of TVA management, the perception of such acts or omissions, measures taken to offset reductions in demand, or a significant dispute with one of TVA's customers. Any deterioration in TVA's reputation may harm TVA's relationships with its customers and stakeholders, may increase TVA's cost of doing business, may interfere with its ability to attract and retain a skilled workforce, and may potentially lead to the imposition of additional laws and regulations that negatively affect the way TVA conducts its business.

Failure to attract and retain an appropriately qualified workforce may negatively affect TVA's results of operations.

TVA's business depends on its ability to recruit and retain key executive officers as well as skilled professional and technical employees. The inability to attract and retain an appropriately qualified workforce could adversely affect TVA's ability to, among other things, operate and maintain generation and transmission facilities, complete large construction projects such as Watts Bar Unit 2, and successfully implement its organizational transformation efforts.

Loss of a quorum of the TVA Board could limit TVA's ability to adapt to meet changing business conditions.

Under the TVA Act, a quorum of the TVA Board is five members. Becoming a member of the TVA Board requires confirmation by the U.S. Senate following appointment by the President. Further, TVA Board members may not continue in office indefinitely until a successor is appointed. The TVA Board is responsible for, among other things, establishing the rates TVA charges for power as well as TVA's long-term objectives, policies, and plans. Accordingly, loss of a quorum for an extended period of time would impair TVA's ability to change rates and to modify these objectives, policies, and plans. Such an impairment would likely have a negative impact on TVA's ability to respond to significant changes in technology, the regulatory environment, or the industry overall and, in turn, negatively affect TVA's cash flows, results of operations, and financial condition.

### ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

### ITEM 2. PROPERTIES

TVA holds personal property in its own name but holds real property as agent for the United States of America. TVA may acquire real property as an agent of the United States by negotiated purchase or by eminent domain.

#### Generating Properties

At September 30, 2015, TVA-operated generating assets consisted of 39 active coal-fired units and 20 inactive coal-fired units, 6 nuclear units, 109 conventional hydroelectric units, 4 pumped-storage units, 12 combined-cycle power blocks, 87 simple-cycle units, 5 diesel generator units, one wind energy site (out of service), and 14 solar sites. In addition, TVA has biomass co-firing potential at its coal-fired sites. As of September 30, 2015, 24 of the simple-cycle combustion turbine units were leased to private entities and leased back to TVA under long-term leases. In addition, TVA is leasing the three Caledonia combined-cycle power blocks under a long-term lease. TVA is in the



process of constructing additional generating assets. For a discussion of these assets, see Item 1, Business — Power Supply and Cleaner Energy Initiatives.

Table of Contents

## Net Capability

The following table summarizes TVA's summer net capability in megawatts ("MW") at September 30, 2015:

SUMMER NET CAPABILITY<sup>(1)</sup>

At September 30, 2015

Source of Capability	Location	Number of Units	Summer Net Capability (MW)	Date First Unit Placed in Service	Date Last Unit Placed in Service
TVA-Operated Generating Facilities					
Coal-Fired					
Allen <sup>(2)</sup>	Tennessee	3	741	1959	1959
Bull Run	Tennessee	1	863	1967	1967
Colbert <sup>(2)</sup>	Alabama	4	712	1955	1965
Cumberland	Tennessee	2	2,470	1973	1973
Gallatin	Tennessee	4	976	1956	1959
Johnsonville	Tennessee	4	428	1951	1959
Kingston	Tennessee	9	1,398	1954	1955
Paradise	Kentucky	3	2,201	1963	1970
Shawnee	Kentucky	9	1,206	1953	1955
Total Coal-Fired		39	10,995		
Nuclear					
Browns Ferry	Alabama	3	3,309	1974	1977
Sequoyah	Tennessee	2	2,292	1981	1982
Watts Bar	Tennessee	1	1,135	1996	1996
Total Nuclear		6	6,736		
Hydroelectric					
Conventional Plants					
	Alabama	36	1,176	1925	1962
	Georgia	2	33	1931	1956
	Kentucky	5	223	1944	1948
	North Carolina	6	492	1940	1956
	Tennessee	60	1,872	1912	1972
Pumped-Storage	Tennessee	4	1,616	1978	1979
Total Hydroelectric		113	5,412		
Natural Gas and/or Oil-Fired <sup>(3),(4)</sup>					
Simple-Cycle Combustion Turbine					
Allen	Tennessee	20	456	1971	1972
Brownsville	Tennessee	4	468	1999	1999
Colbert	Alabama	8	392	1972	1972
Gallatin	Tennessee	8	600	1975	2000
Gleason <sup>(5)</sup>	Tennessee	3	465	2000	2000
Johnsonville	Tennessee	20	1,133	1975	2000
Kemper	Mississippi	4	312	2002	2002
Lagoon Creek	Tennessee	12	941	2001	2002
Marshall County	Kentucky	8	621	2002	2002
Subtotal Simple-Cycle Combustion Turbine		87	5,388		
Combined-Cycle Combustion Turbine					
Ackerman <sup>(6)</sup>	Mississippi	1	705	2007	2007

Edgar Filing: Tennessee Valley Authority - Form 10-K

Caledonia <sup>(7)</sup>	Mississippi	3	765	2003	2003
John Sevier <sup>(8)</sup>	Tennessee	1	870	2012	2012
Lagoon Creek <sup>(9)</sup>	Tennessee	1	525	2010	2010
Magnolia	Mississippi	3	920	2003	2003
Southaven	Mississippi	3	774	2003	2003
Subtotal Combined-Cycle Combustion Turbine		12	4,559		
Total Natural Gas and/or Oil-Fired Diesel Generator		99	9,947		
Meridian	Mississippi	5	9	1998	1998
Total Diesel Generators		5	9		
TVA Renewable Resources (non-hydro) <sup>(10)</sup>			< 1		
Total TVA-Operated Generating Facilities			33,099		

Table of Contents

Contract Renewable Resources <sup>(11)(12)</sup>	176
Power Purchase and Other Agreements <sup>(13)</sup>	3,189
Total Summer Net Capability	36,464

Notes

- (1) Net capability is defined as the ability of an electric system, generating unit, or other system component to carry or generate power for a specified time period and does not include operational limitations such as derates.
- (2) Eight MW of cofired methane at Allen and seven MW of cofired biomass at Colbert are accounted for as coal generation as opposed to TVA Renewable Resources.
- (3) See Generating Properties above for a discussion of TVA-operated natural gas and/or oil-fired facilities subject to leaseback and long-term lease arrangements.
- (4) Peak firing of simple-cycle combustion turbine units accounts for an additional 257 MW of short-term capability.
- (5) Two units at the Gleason Simple-Cycle Facility were derated as of September 30, 2015, pending completion of maintenance.
- (6) Ackerman Combined Cycle Facility is a single steam cycle unit driven by two gas turbines (2x1 configuration).
- (7) Caledonia is currently a leased facility operated by TVA.
- (8) John Sevier Combined Cycle Facility is a single steam cycle unit driven by three gas turbines (3x1 configuration).
- (9) Lagoon Creek Combined Cycle Facility is a single steam cycle unit driven by two gas turbines (2x1 configuration).
- (10) TVA's three wind turbines (2 MW nameplate capacity) at its Buffalo Mountain Site in Tennessee were not operational as of September 30, 2015, and do not appear to be economical for returning to operation. TVA owns 0.4 MW of solar installations at 14 sites.
- (11) Contract Renewable Resources include Generation Partners, Renewable Standard Offer, and 15 wind turbine generators located on Buffalo Mountain.
- (12) Solar and wind resources are listed at nameplate capacity.
- (13) Power Purchase and Other Agreements includes renewable resources. See Item 1, Business — Power Supply and Cleaner Energy Initiatives — Purchased Power and Other Agreements for information on renewable energy power purchase contracts.

Transmission Properties

TVA's transmission system interconnects with systems of surrounding utilities and consists primarily of the following assets:

- Approximately 2,500 circuit miles of 500 kilovolt, 11,500 circuit miles of 161 kilovolt, and 2,200 circuit miles of other voltage transmission lines;
- 512 transmission substations, power switchyards, and switching stations; and
- 1,293 customer connection points (customer, generation, and interconnection).

At September 30, 2015, certain qualified technological equipment and other software related to TVA's transmission system were leased to private entities and leased back to TVA under long-term leases.

Natural Resource Stewardship Properties

TVA operates and maintains 49 dams and manages the following natural resource stewardship properties:

## Edgar Filing: Tennessee Valley Authority - Form 10-K

- Approximately 11,000 miles of reservoir shoreline;
- Approximately 293,000 acres of reservoir land;
- Approximately 650,000 surface acres of reservoir water; and
- Approximately 80 public recreation areas throughout the Tennessee Valley, including campgrounds, day-use areas, and boat launching ramps.

Additionally, TVA manages over 170 agreements for commercial recreation (such as campgrounds and marinas).

As part of its stewardship responsibilities, TVA approval is required to be obtained before any obstruction affecting navigation, flood control, or public lands can be constructed in or along the Tennessee River and its tributaries.

### Buildings

TVA has a variety of buildings throughout its service area in addition to the buildings located at its generation and transmission facilities, including office buildings, customer service centers, power service centers, warehouses, visitor centers, and crew quarters. The most significant of these buildings are the Knoxville Office Complex and the Chattanooga Office Complex. TVA also has a significant number of buildings in Muscle Shoals, Alabama, and is implementing strategies to further reduce its Muscle Shoals real property holdings.

### Disposal of Property

Under the TVA Act, TVA has broad authority to dispose of personal property but only limited authority to dispose of real property. The primary, but not exclusive, sources of TVA's authority to dispose of real property are briefly described below:

- Under Section 31 of the TVA Act, TVA has authority to dispose of surplus real property at a public auction.
- Under Section 4(k) of the TVA Act, TVA can dispose of real property for certain specified purposes, including providing replacement lands for certain entities whose lands were flooded or destroyed by dam or reservoir construction and to grant easements and rights-of-way upon which are located transmission or distribution lines.

Table of Contents

Under Section 15d(g) of the TVA Act, TVA can dispose of real property in connection with the construction of generating plants or other facilities under certain circumstances.

Additionally, under 40 U.S.C. § 1314, TVA has authority to grant easements for rights-of-way and other purposes.

The Basic Tennessee Valley Authority Power Bond Resolution adopted by the TVA Board on October 6, 1960, as amended on September 28, 1976, October 17, 1989, and March 25, 1992 (the "Basic Resolution"), prohibits TVA from mortgaging any part of its power properties and from disposing of all or any substantial portion of these properties unless TVA provides for a continuance of the interest, principal, and sinking fund payments due and to become due on all outstanding Bonds, or for the retirement of such Bonds.

ITEM 3. LEGAL PROCEEDINGS

From time to time, TVA is party to or otherwise involved in lawsuits, claims, proceedings, investigations, and other legal matters ("Legal Proceedings") that have arisen in the ordinary course of conducting TVA's activities, as a result of catastrophic events or otherwise. While the outcome of the Legal Proceedings to which TVA is a party cannot be predicted with certainty, any adverse outcome to a Legal Proceeding involving TVA may have a material adverse effect on TVA's cash flows, results of operations, and financial condition.

For a discussion of Legal Proceedings involving TVA, see Note 22 — Legal Proceedings, which discussion is incorporated by reference into this Item 3.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

Table of Contents

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND  
ISSUER PURCHASES OF EQUITY SECURITIES

Not applicable.

45

---

Table of Contents

## ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data for the years 2011 through 2015 should be read in conjunction with the audited financial statements and notes thereto (collectively, the "Consolidated Financial Statements") presented in Item 8, Financial Statements and Supplementary Data. Certain reclassifications have been made to the 2011, 2012, and 2013 financial statement presentations to conform to the 2014 and 2015 presentations.

Selected Financial Data<sup>(1)(2)</sup>

For the years ended, or at, September 30

(dollars in millions)

	2015	2014	2013	2012	2011
Sales (millions of kWh)	158,163	158,057	161,925	165,255	167,730
Peak load (MW)	32,751	33,352	28,726	31,098	31,434
Operating revenues	\$11,003	\$11,137	\$10,956	\$11,220	\$11,841
Fuel expense	\$2,444	\$2,730	\$2,820	\$2,680	\$2,926
Purchased power expense	\$950	\$1,094	\$1,027	\$1,189	\$1,427
Operating and maintenance expense	\$2,838	\$3,341	\$3,428	\$3,510	\$3,617
Net interest expense	\$1,133	\$1,169	\$1,226	\$1,273	\$1,305
Net income	\$1,111	\$469	\$271	\$60	\$162
Construction expenditures	\$2,850	\$2,384	\$2,051	\$2,119	\$2,417
Total assets	\$48,825	\$45,596	\$46,106	\$47,334	\$46,393
Financial obligations					
Long-term debt, net <sup>(3)</sup>					
Long-term power bonds, net	\$22,684	\$21,948	\$22,315	\$20,269	\$22,412
Long-term debt of variable interest entities	\$1,246	\$1,279	\$1,311	\$981	\$—
Total long-term debt, net	\$23,930	\$23,227	\$23,626	\$21,250	\$22,412
Current debt, net <sup>(3)</sup>					
Short-term debt, net	\$1,034	\$596	\$2,432	\$1,507	\$482
Current maturities of power bonds	\$32	\$1,032	\$32	\$2,308	\$1,537
Current maturities of long-term debt of variable interest entities	\$33	\$32	\$30	\$13	\$—
Total current debt, net	\$1,099	\$1,660	\$2,494	\$3,828	\$2,019
Total debt <sup>(3)</sup>	\$25,029	\$24,887	\$26,120	\$25,078	\$24,431
Capital leases <sup>(4)</sup>	\$105	\$109	\$43	\$35	\$5
	\$37	\$39	\$40	\$—	\$—



Membership interests of variable interest entity subject to mandatory redemption<sup>(3)(4)</sup>

Leaseback obligations	\$616	\$691	\$761	\$1,203	\$1,282
Energy prepayment obligations	\$310	\$410	\$510	\$612	\$717

Notes

(1) See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations for a description of certain items in 2015, 2014, and 2013 affecting results in those years.

(2) See Item 1A, Risk Factors and Note 22 for a discussion of risks and contingencies that could affect TVA's future financial results.

(3) See Note 10 and Note 14 — Debt Outstanding.

(4) Included in Accounts payable and accrued liabilities and Other long-term liabilities on the consolidated balance sheets.

Table of Contents

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

(Dollars in millions except where noted)

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help the reader understand the Tennessee Valley Authority ("TVA"), its operations, and its present business environment. The MD&A is provided as a supplement to — and should be read in conjunction with — TVA's consolidated financial statements and the accompanying notes thereto contained in Item 8, Financial Statements and Supplementary Data of this Annual Report on Form 10-K for the fiscal year ended September 30, 2015 (the "Annual Report"). The MD&A includes the following sections:

• **Business and Mission** - a general description of TVA's business, objectives, strategic priorities, and core capabilities;

• **Executive Overview** - a general overview of TVA's activities and results of operations for 2015;

• **Results of Operations** - an analysis of TVA's consolidated results of operations for the three years presented in its consolidated financial statements;

• **Liquidity and Capital Resources** - an analysis of cash flows, a description of aggregate contractual obligations, and an overview of financial position;

• **Key Initiatives and Challenges** - an overview of current and future initiatives and challenges facing TVA;

• **Critical Accounting Policies and Estimates** - a summary of accounting policies that require critical judgments and estimates;

• **Fair Value Measurements** - a description of TVA's investments and derivative instruments and valuation considerations;

• **Legislative and Regulatory Matters** - a summary of laws and regulations that may impact TVA; and

• **Risk Management Activities** - a description of TVA's risk governance and exposure to various market risks.

**Business and Mission**

**Business**

TVA operates the nation's largest public power system. At September 30, 2015, TVA provided electricity to approximately 52 large industrial customers, eight federal agency customers, and 155 local power company customers of TVA ("LPCs") that serve over nine million people in parts of seven southeastern states. TVA generates virtually all of its revenues from the sale of electricity, and in 2015 revenues from the sale of electricity totaled \$10.8 billion. As a wholly-owned agency and instrumentality of the United States, however, TVA differs from other electric utilities in a number of ways:

• TVA is a government corporation.

• The area in which TVA sells power is limited by the Tennessee Valley Authority Act of 1933, as amended (the "TVA Act"), under a provision known as the "fence"; however, another provision of federal law known as the "anti-cherry-picking" provision generally protects TVA from being forced to provide access to its transmission lines to

others for the purpose of delivering power to customers within substantially all of TVA's defined service area.

The rates TVA charges for power are set solely by the TVA Board of Directors (the "TVA Board") and are not set or reviewed by another entity, such as a public utility commission. In setting rates, however, the TVA Board is charged by the TVA Act to have due regard for the primary objectives of the TVA Act, including the objective that power be sold at rates as low as feasible.

TVA is not authorized to raise capital by issuing equity securities. TVA relies primarily on cash from operations and proceeds from power program borrowings to fund its operations and is authorized by the TVA Act to issue bonds, notes, or other evidences of indebtedness ("Bonds") in an amount not to exceed \$30.0 billion outstanding at any given time. Although TVA's operations were originally funded primarily with appropriations from Congress, TVA has not received any appropriations from Congress for any activities since 1999 and, as directed by Congress, has funded essential stewardship activities primarily with power revenues.

Table of Contents

TVA's Mission of Service

TVA was built for the people, created by Congress, and charged with a unique mission - to improve the quality of life in a seven-state region through the integrated management of the region's resources.

TVA's mission focuses on three key areas:

Energy - Provide reliable, affordable electric power throughout the Tennessee Valley;

Environment - Act as steward of the region's natural resources; and

Economic Development - Serve as a catalyst for sustainable economic development.

While TVA's mission has not changed since it was established in 1933, the climate in which TVA operates continues to evolve. The business and economic environment has become more challenging due to economic conditions, tougher environmental standards, the need to modernize its generating fleet, and changing customer needs. To adapt to these challenges, TVA has developed the following strategic imperatives to position itself to carry out its mission of serving the people of the Tennessee Valley:

Rates - Maintain low rates;

Stewardship - Be responsible stewards;

Debt - Live within its means; and

Asset Portfolio - Meet reliability expectations and provide a balanced portfolio.

TVA's mission sets the stage for its strategic planning process that includes strategic objectives, initiatives, and scorecards for performance designed to provide clear direction for improving TVA's core business.

Linking the Mission to Performance

TVA has formulated key performance measures to support its strategic imperatives. The intent of these measures is to align employees to TVA's mission by focusing its collective efforts on operational excellence, fiscal responsibility, and economic development and environmental stewardship. The measures are designed to promote teamwork, encourage high performance behaviors, and motivate TVA employees to achieve goals aligned with TVA's mission and values.

The 2015 corporate results compared with targets for these key indicators are reflected in the chart below. In addition to these Corporate Measures, TVA organizations also develop and track performance measures. See Item 11, Executive Compensation — Compensation Discussion and Analysis for additional information regarding the TVA 2015 Organization Scorecards.

Corporate Measure	Weight	Actual	Threshold	Target	Stretch
Corporate total spending (\$ millions)	40%	\$792	\$856	\$837	\$817
Nuclear unit capability factor (%)	20%	91.1%	89.8%	90.8%	92.0%
Coal seasonal equivalent forced outage rate (%)	15%	4.8%	6.4%	5.9%	5.0%
Load not served (system minutes)	10%	3.8	5.8	4.4	3.7
Reportable environmental events	10%	22	17	12	9

Edgar Filing: Tennessee Valley Authority - Form 10-K

Combined cycle seasonal equivalent forced outage rate (%)	5%	0.6%	3.3%	2.1%	1.1%
Executive Overview					

TVA's net income for the years ended September 30, 2015 and 2014, was \$1.1 billion and \$469 million, respectively. Sales of electricity were relatively flat for the year ended September 30, 2015, as compared to the prior year. Revenue from the sales of electricity had a slight decrease of \$152 million for the year ended September 30, 2015, as compared to the year ended September 30, 2014, primarily due to a decrease in fuel cost recovery driven by lower fuel rates offset by the increase in the 2015 non-fuel base rate and warmer weather in 2015. Operating and maintenance costs decreased \$503 million for the year ended September 30, 2015, as compared to the prior year primarily due to cost savings initiatives undertaken by management,

## Table of Contents

the timing of projects, fewer nuclear outages, and the timing of pension costs. These decreases in expenses were partially offset by an increase in depreciation expense related to the timing of idling or retiring certain coal-fired units. Overall, TVA exceeded its cost reduction initiative goal of reducing operating costs by \$500 million from its 2013 budget by over \$100 million.

TVA also focused on managing debt to help ensure long-term financial health. TVA continues to benefit from lower interest rates, and set a new record in September 2015 when it issued \$1.0 billion of 50-year global power bonds carrying an interest rate of 4.25 percent, priced at a yield of 4.383 percent. Favorable operating cash flow during 2015 enabled TVA to fund some of its \$2.9 billion of capital investments with operating funds instead of borrowing additional debt.

By partnering with its customers, TVA strengthened customer loyalty and relationships while its economic development efforts attracted investments in the Tennessee Valley of over \$7.8 billion and 76,200 jobs created or retained. In addition, TVA worked with its LPC customers to restructure its pricing plan to put TVA in a more competitive position to attract and retain customers. It is expected that changes to this plan will better link the actual cost of generating power with the amount its customers pay by improving TVA's rate structure and pricing products and programs, and will help customers make more informed decisions on energy usage.

TVA continues to focus on balancing its asset portfolio to be able to provide clean, reliable, and affordable energy under a variety of future conditions. During 2015, TVA retired Units 7 and 8 at Widows Creek Fossil Plant ("Widows Creek") removing 938 MW of summer net capability from its coal-fired generation fleet. This was the last operating unit at the Stevenson, Alabama facility, which stopped generating electricity in September 2015 after a 63-year history of producing power. Work is proceeding on Watts Bar Nuclear Plant ("Watts Bar") Unit 2. On October 22, 2015, the NRC issued a forty-year operating license for Watts Bar Unit 2, and it is expected that the unit will begin commercial operations in the third quarter of 2016. TVA also acquired a 700 MW combined-cycle gas plant located in Ackerman, Mississippi in April 2015.

Operational improvements in TVA's nuclear program continue over that of the past few years. In September 2015, Units 1 and 2 of the Sequoyah Nuclear Plant ("Sequoyah") received license extensions to 2040 and 2041, respectively.

Work is also continuing on the remediation of the seepage discovered in October 2014 at Boone Dam. Remediation is expected to take five to seven years to complete.

Longer-term, TVA anticipates low growth rates and plans to focus on the future of its energy supply utilizing more natural gas, renewables, and nuclear power as well as energy efficiency and demand response initiatives and projects related to compliance with environmental and reliability requirements and standards. This focus was validated in the summer of 2015 when TVA completed an update of its 2011 Integrated Resource Plan ("IRP") in response to changes in the utility industry and changes within its seven-state service territory. This update involved significant stakeholder engagement and employed industry-leading modeling improvements that identified a robust, least-cost, and risk-informed target power supply mix for the next 20 years. The IRP also concludes there is no immediate need for new baseload capacity beyond Watts Bar Unit 2 and upgrades at the Browns Ferry Nuclear Plant ("Browns Ferry"). The TVA Board approved the recommendations in the 2015 IRP which provide strategic guidance for a diverse, resource portfolio and reinforce the importance that TVA's power be reliable, affordable, diverse and sustainable into the future. The TVA Board also directed that future developments such as changes in energy efficiency pricing and performance, renewable resources pricing and performance, load forecasting, and commodity prices be monitored so that management may appropriately consider possible adjustments to its planning direction. Updates to the 2015 IRP are to be initiated no later than 2020.



Table of Contents

Results of Operations

Sales of Electricity

Sales of electricity accounted for virtually all of TVA's operating revenues in 2015, 2014, and 2013. TVA sells power at wholesale rates to LPCs that resell the power to their customers at retail rates. TVA also sells power to directly served customers, consisting primarily of federal agencies and customers with large or nonstandard loads. In addition, power that exceeds the needs of the TVA system is sold under exchange power arrangements with certain other power systems.

The following chart compares TVA's energy sales statistics for the years ended September 30, 2015, 2014, and 2013:

Weather affects both the demand for TVA power and the price for that power. TVA uses degree days to measure the impact of weather on its power operations. Degree days measure the extent to which average temperatures in the five largest cities in TVA's service area vary from 65 degrees Fahrenheit.



Table of Contents

Notes

\* Normal heating degree days for the years ended September 30, 2015, 2014 and 2013 was 3,360. This calculation is updated every five years in order to incorporate the then most recent 30 years. It was last updated in 2011.

\*\* Normal cooling degree days for the years ended September 30, 2015, 2014, and 2013 was 1,863. This calculation is updated every five years in order to incorporate the then most recent 30 years. It was last updated in 2011.

2015 Compared to 2014

Sales of electricity increased 106 million kilowatt hours ("kWh") for the year ended September 30, 2015, as compared to the year ended September 30, 2014, primarily due to increased sales volume for LPCs resulting from a seven percent increase in cooling degree days. This increase was partially offset by both a decrease in sales to industries directly served as a result of economic conditions affecting certain customers, and a decrease in sales to federal agencies and other, primarily from a reduction in off-system sales as TVA had less excess generation available for sale.

2014 Compared to 2013

Sales of electricity decreased 3.9 billion kWh for the year ended September 30, 2014, compared to the year ended September 30, 2013, primarily due to a decrease in demand from industries directly served. The reduced demand was largely the result of a decrease in demand by United States Enrichment Corporation ("USEC"), which began ceasing operations during the third quarter of 2013. Partially offsetting the decrease from industries directly served was an increase in sales to federal agencies and other due to an increase in off-system sales as TVA had excess generation available for resale.

Table of Contents

## Financial Results

The following table compares operating results for 2015, 2014, and 2013:

## Summary Consolidated Statements of Operations

	2015	2014	2013
Operating revenues	\$11,003	\$11,137	\$10,956
Operating expenses	8,788	9,548	9,503
Operating income	2,215	1,589	1,453
Other income, net	29	49	44
Net interest expense	1,133	1,169	1,226
Net income	\$1,111	\$469	\$271

Operating Revenues. Operating revenue components as a percentage of total operating revenues for 2015, 2014, and 2013 consisted of the following:

The rate structure in effect for the years ended September 30, 2015, 2014, and 2013 provides price signals intended to encourage LPCs and end-use customers to shift energy usage from high-cost generation periods to less expensive generation periods. Under this structure, weather can positively or negatively impact both volume and effective rates, while only volume was impacted under the former wholesale structure. This is because the wholesale structure includes two components: a demand charge and an energy charge. The demand charge is based on the customer's peak monthly usage and increases as the peak increases. The energy charge is based on the kWhs used by the customer. The rate structure also includes a separate fuel rate that includes the costs of natural gas, fuel oil, purchased power, coal, emission allowances, nuclear fuel, and other fuel-related commodities; realized gains and losses on derivatives purchased to hedge the costs of such commodities; and tax equivalents associated with the fuel cost adjustments.

The changes in revenue components are summarized below:

	Variance 2015 vs. 2014	Variance 2014 vs. 2013
Fuel cost recovery	\$(371	) \$(19 )
Base revenue	230	208
Off-system sales	(11	) (19 )
Other revenue	18	11
Total	\$(134	) \$181

Table of Contents

2015 Compared to 2014

Operating revenues decreased \$134 million for the year ended September 30, 2015, as compared to the year ended September 30, 2014, primarily due to a \$371 million decrease in fuel cost recovery, which was partially offset by a \$230 million increase in base revenue. The \$371 million decrease in fuel cost recovery was primarily attributable to lower fuel rates. The \$230 million increase in base revenue was predominantly driven by an increase of \$206 million resulting from the non-fuel base rate increase that became effective October 1, 2014, and an increase of \$24 million from higher volume. The \$230 million increase in base revenue is split between an increase in energy revenue of \$138 million and an increase in demand revenue of \$105 million.

2014 Compared to 2013

Operating revenues increased \$181 million for the year ended September 30, 2014, compared to the year ended September 30, 2013, primarily due to a \$208 million increase in base revenue. The increase in base revenue was attributable to higher sales volume to LPCs and the non-fuel base rate increase that became effective October 1, 2013. This was partially offset by a \$19 million decrease in fuel cost recovery which resulted from the decrease in sales to industries directly served due to the reduction in demand by USEC. In addition, off-system sales decreased by \$19 million primarily due to a reduction in excess generating capacity.

See Sales of Electricity above for further discussion of the change in the volume of sales of electricity and Operating Expenses below for further discussion of the change in fuel expense.

Operating Expenses. Operating expense components as a percentage of total operating expenses for 2015, 2014, and 2013 consisted of the following:

Table of Contents

The following table summarizes TVA's expenses for various fuels for the years indicated:

Fuel Expense for TVA-Owned Facilities\*

For the years ended September 30

(in millions)

	2015	2014	2013
Coal	\$1,564	\$1,873	\$1,890
Natural gas	575	531	504
Fuel oil	36	48	36
Nuclear fuel	273	307	317
Total fuel	\$2,448	\$2,759	\$2,747

Note

\* Excludes effects of the fuel cost adjustment deferrals and amortization on fuel expense in the amounts of \$4 million, \$(29) million, and \$73 million for the years ended September 30, 2015, 2014, and 2013, respectively.

The following chart summarizes TVA's net generation and purchased power in millions of kWh by generating source for the periods indicated:

Note

Renewable resources (non-hydro) is less than 1% for all periods shown, and therefore is not represented on the chart above.

#### 2015 Compared to 2014

Fuel expense decreased \$286 million for the year ended September 30, 2015, as compared to the prior year. This decrease was primarily driven by overall favorable fuel rates and a change in the mix of generation resources, which contributed approximately \$314 million to the decrease in fuel expense. Partially offsetting this decrease in fuel expense was an increase in fuel expense driven by more timely collections of fluctuations in fuel costs during the year ended September 30, 2015, which accounted for a \$25 million increase.

Purchased power expense decreased \$144 million for the year ended September 30, 2015, as compared to the prior year, primarily due to lower market prices for natural gas, as TVA's primary source of purchased power is natural gas-fired generation. The average Henry Hub natural gas spot price for the year ended September 30, 2015, was approximately 30 percent lower than the prior year. The lower prices contributed to a \$156 million decrease in purchased power expense. Partially offsetting this decrease in purchased power expense was a \$6 million increase in purchased power expense driven by more timely collections of fluctuations in fuel costs in the year ended September 30, 2015. Additionally offsetting the decrease in

Table of Contents

purchased power expense was an increase of one percent in the volume of power purchased contributing to an increase in purchased power expense of \$6 million.

Operating and maintenance expense decreased \$503 million for the year ended September 30, 2015, as compared to the prior year. This decrease was due to several factors including a \$241 million decrease in pension and post-retirement costs due mainly to regulatory accounting actions taken by the TVA Board. Beginning October 1, 2014, TVA began deferring pension costs as regulatory assets to the extent that the amount calculated under accounting principles generally accepted in the United States of America ("GAAP") as pension expense differs from the amount TVA contributes to the pension plan. The ongoing cost savings initiatives undertaken by management (see Key Initiatives and Challenges — Continuous Improvement Initiatives below) contributed approximately \$164 million to the decrease in operating and maintenance expense, with approximately \$114 million attributable to labor savings. Additionally, there was a \$60 million decrease in projects expense due primarily to the timing of nuclear and information technology projects and a \$34 million decrease in planned outage expense, resulting from approximately 50 less nuclear outage days in the year ended September 30, 2015, as compared to the prior year.

Depreciation and amortization expense increased \$188 million for the year ended September 30, 2015, as compared to the prior year, primarily due to an increase of \$177 million in the amount of accelerated depreciation expense recognized on certain coal-fired units. The increase in accelerated depreciation was driven primarily by the decision to accelerate the retirement of Widows Creek Unit 7. See Note 1 — Property, Plant, and Equipment, and Depreciation.

Tax equivalents expense decreased \$15 million for the year ended September 30, 2015, as compared to the same period of the prior year. This change primarily reflects a decrease in the accrued tax equivalent expense related to the fuel cost adjustment mechanism. The accrued tax equivalent expense is equal to five percent of fuel cost adjustment mechanism revenues and decreased for the year ended September 30, 2015, as compared to the same period of the prior year.

2014 Compared to 2013

Fuel expense decreased \$90 million for the year ended September 30, 2014, as compared to the prior year, primarily due to the timing of collections of fluctuations in fuel costs and a reduction in sales volume. For the year ended September 30, 2014, more timely collections of fluctuations in fuel costs decreased fuel expense by \$102 million as compared to the prior year, primarily due to the weather patterns in 2013. Additionally, a reduction in sales volume of two percent contributed to a \$70 million decrease in fuel expense. Offsetting these decreases was an increase of \$82 million in fuel expense primarily due to a change in the generation mix and higher natural gas prices. Higher prices for natural gas increased fuel expense by approximately \$50 million. Decreased rainfall and runoff in 2014 contributed to a decrease of 27 percent in hydroelectric generation as compared to the prior year. Hydroelectric generation is TVA's least expensive type of generation.

Purchased power expense increased \$67 million for the year ended September 30, 2014, as compared to the prior year, primarily due to an increase of 10 percent in the average price of purchased power. The increase in the average price resulted in a \$104 million increase to purchased power expense and was largely a result of higher market prices for natural gas, as TVA's primary source of purchased power is natural gas-fired generation. As an indication of general market conditions, the average Henry Hub natural gas spot price for the year ended September 30, 2014 was \$4.348 per mmBtu, which was 20 percent higher than the average price for the prior year. Offsetting the increase in purchased power expense was a \$31 million decrease due to the timing of the fuel cost recovery mechanism, primarily due to the weather patterns in 2013.

Operating and maintenance expense decreased \$87 million in 2014 as compared with 2013. This decrease was primarily driven by a \$122 million decrease in expenses related to cost savings initiatives undertaken by management

(see Key Initiatives and Challenges — Continuous Improvement Initiatives below), a \$52 million decrease in pension and post-retirement costs due to an increase in the discount rate, and a \$25 million decrease in nuclear outage expense primarily due to a reduction in major outage projects. Offsetting these decreases were an increase of \$65 million in employee-related expenses related to restructuring activities and a \$42 million increase in other post-employment benefit expense.

Depreciation and amortization expense increased \$163 million in 2014, compared to 2013, primarily due to an increase in the amount of accelerated depreciation recognized for certain coal-fired units to be idled. Incremental depreciation associated with the idling of coal-fired units was \$206 million for the year ended September 30, 2014, compared with \$49 million for the year ended September 30, 2013. See Note 1 — Property, Plant, and Equipment, and Depreciation.

Tax equivalents expense decreased \$8 million for the year ended September 30, 2014, as compared to the prior year. This change primarily reflects a decrease in gross revenue from power sales (excluding sales and deliveries to federal agencies and off-system sales with other utilities) during 2013, compared to 2012, as tax equivalent payments are calculated based on the previous year's results.

Table of Contents

Interest Expense. Interest expense and interest rates for 2015, 2014, and 2013 were as follows:

## Interest Expense and Rates

For the years ended September 30

	2015	Percent Change	2014	Percent Change	2013	
Interest expense <sup>(1)</sup>						
Interest expense	\$1,347	0.2	% \$1,344	(3.6	)% \$1,394	
Allowance for funds used during construction	(214	) 22.3	% (175	) 4.2	% (168	)
Net interest expense	\$1,133	(3.1	)% \$1,169	(4.6	)% \$1,226	
	2015	Percent Change	2014	Percent Change	2013	
Interest rates (average)						
Long-term outstanding power bonds <sup>(2)</sup>	5.495	% (1.4	)% 5.575	% (2.6	)% 5.725	%
Long-term debt of VIE	4.609	% 0.2	% 4.601	% (4.6	)% 4.824	%
Membership interests of variable interest entity subject to mandatory redemption	7.000	% (0.2	)% 7.017	% 1.9	% 6.887	%
Discount notes	0.051	% —	% 0.051	% (34.6	)% 0.078	%
Blended	5.162	% 0.3	% 5.146	% (2.4	)% 5.273	%

## Notes

(1) Interest expense includes amortization of debt discounts, issuance, and reacquisition costs, net.

(2) The average interest rates on long-term debt obligations are calculated using an average of long-term debt balances at the end of each month in the periods depicted and interest expense for those periods.

## 2015 Compared to 2014

Net interest expense decreased \$36 million for the year ended September 30, 2015, as compared to the prior year. This decrease was primarily attributable to an increase of \$39 million in allowance for funds used during construction ("AFUDC") as a result of ongoing construction activities at Watts Bar Unit 2, which was partially offset by a \$3 million increase in interest expense mainly due to a higher average balance of long-term debt.

## 2014 Compared to 2013

Net interest expense decreased \$57 million for the year ended September 30, 2014. This was primarily attributable to a decrease in long-term interest expense of \$58 million, related to a decrease in both the average balance and the average interest rate of TVA's outstanding debt. See Note 14.

## Liquidity and Capital Resources

## Sources of Liquidity

To meet cash needs and contingencies, TVA depends on various sources of liquidity. TVA's primary sources of liquidity are cash from operations and proceeds from the issuance of short-term and long-term debt. Current liabilities may exceed current assets from time to time in part because TVA uses short-term debt to fund short-term cash needs, as well as to pay scheduled maturities and other redemptions of long-term debt. The daily balance of cash and cash equivalents maintained is based on near-term expectations for cash expenditures and funding needs.

In addition to cash from operations and proceeds from the issuance of short-term and long-term debt, TVA's sources of liquidity include a \$150 million credit facility with the U.S. Treasury, three long-term revolving credit facilities totaling \$2.5 billion, and proceeds from other financings. See Note 14 — Credit Facility Agreements. Other financing arrangements include call monetization transactions, sales of assets, and sales of receivables and loans.

The TVA Act authorizes TVA to issue Bonds in an amount not to exceed \$30.0 billion outstanding at any time. At September 30, 2015, TVA had \$23.9 billion of Bonds outstanding (not including noncash items of foreign currency exchange gain of \$21 million and net discount on sale of Bonds of \$108 million). The balance of Bonds outstanding directly affects TVA's capacity to meet operational liquidity needs and to strategically use Bonds to fund certain capital investments as management and the TVA Board may deem desirable. Other options for financing not subject to the limit on Bonds, including lease financings (see Lease Financings below and Note 10), could provide supplementary funding if needed. Also, the impact of energy efficiency and demand response initiatives may reduce generation requirements and thereby reduce capital investment needs. Currently, TVA believes that it has adequate capability to fund its ongoing operational liquidity needs and make planned capital



Table of Contents

investments over the next decade through a combination of Bonds, additional power revenues through power rate increases, cost reductions, or other ways.

**Debt Securities.** TVA's Bonds are not obligations of the United States, and the United States does not guarantee the payments of principal or interest on Bonds. TVA's Bonds consist of power bonds and discount notes. Power bonds have maturities of between one and 50 years. At September 30, 2015, the average maturity of long-term power bonds was 17.8 years, and the average interest rate was 4.78 percent. Discount notes have maturities of less than one year. Power bonds and discount notes have a first priority and equal claim of payment out of net power proceeds. Net power proceeds are defined as the remainder of TVA's gross power revenues after deducting the costs of operating, maintaining, and administering its power properties and payments to states and counties in lieu of taxes, but before deducting depreciation accruals or other charges representing the amortization of capital expenditures, plus the net proceeds from the sale or other disposition of any power facility or interest therein.

Power bonds and discount notes are both issued pursuant to Section 15d of the TVA Act and pursuant to the Basic Tennessee Valley Authority Power Bond Resolution adopted by the TVA Board on October 6, 1960, as amended on September 28, 1976, October 17, 1989, and March 25, 1992 (the "Basic Resolution"). The TVA Act and the Basic Resolution each contain two bond tests: the rate test and the bondholder protection test.

Under the rate test, TVA must charge rates for power which will produce gross revenues sufficient to provide funds for:

- Operation, maintenance, and administration of its power system;
  - Payments to states and counties in lieu of taxes;
  - Debt service on outstanding Bonds;
  - Payments to the U.S. Treasury in repayment of and as a return on the government's appropriation investment in TVA's power facilities (the "Power Program Appropriation Investment"); and
- Such additional margin as the TVA Board may consider desirable for investment in power system assets, retirement of outstanding Bonds in advance of maturity, additional reduction of the Power Program Appropriation Investment, and other purposes connected with TVA's power business, having due regard for the primary objectives of the TVA Act, including the objective that power shall be sold at rates as low as are feasible. See Note 18 — Appropriation Investment.

The rate test for the one-year period ended September 30, 2015, was calculated after the end of 2015, and TVA met the test's requirements.

Under the bondholder protection test, TVA must, in successive five-year periods, use an amount of net power proceeds at least equal to the sum of:

- The depreciation accruals and other charges representing the amortization of capital expenditures, and
- The net proceeds from any disposition of power facilities,

for either

- The reduction of its capital obligations (including Bonds and the Power Program Appropriation Investment), or
- Investment in power assets.

The bondholder protection test for the five-year period ended September 30, 2015, was calculated after the end of 2015, and TVA met the test's requirements. TVA must next meet the bondholder protection test for the five-year period ending September 30, 2020.

TVA uses proceeds from the issuance of discount notes, in addition to other sources of liquidity, to fund short-term cash needs and scheduled maturities of long-term debt.

Table of Contents

The following table provides additional information regarding TVA's short-term borrowings.

## Short-Term Borrowing Table

	At September 30 2015	For the year ended September 30 2015	At September 30 2014	For the year ended September 30 2014	At September 30 2013	For the year ended September 30 2013
Amount Outstanding (at End of Period) or Average Amount						
Outstanding (During Period)						
Discount notes	\$1,034	\$1,357	\$596	\$1,737	\$2,432	\$1,887
Weighted Average Interest Rate						
Discount notes	0.055	% 0.051	% 0.002	% 0.051	% 0.042	% 0.078
Maximum Month-End Amount						
Outstanding (During Period)						
Discount notes	N/A	\$2,590	N/A	\$2,442	N/A	\$3,261

TVA ended with a higher balance of short-term debt at September 30, 2015, than at September 30, 2014, due to timing of cash flows and debt portfolio management decisions. The average balance of short-term debt was lower in 2015 than 2014 due to timing of financing activities in both years. TVA held a lower balance of short-term debt at September 30, 2014, than at September 30, 2013, due to debt portfolio management decisions. The average balance of short-term debt was lower in 2014 than 2013 due to lower overall financing needs in 2014. The variance in the average interest rate on discount notes is primarily due to changes in market conditions.

TVA uses a significant portion of its power bond proceeds to refinance previously-issued power bonds as they mature or are redeemed. From time to time, TVA also uses power bond proceeds for other power program purposes, including financing construction projects.

During both 2015 and 2014, TVA issued \$1.0 billion of power bonds, and TVA redeemed \$1.2 billion and \$365 million of power bonds during 2015 and 2014, respectively. Power bonds outstanding, excluding unamortized discounts and premiums and net exchange losses from foreign currency transactions, at September 30, 2015 were \$23.9 billion (including current maturities) and at September 30, 2014 were \$23.6 billion (including current maturities). For additional information about TVA debt issuance activity and debt instruments issued and outstanding at September 30, 2015, and 2014, including rates, maturities, outstanding principal amounts, and redemption features, see Note 14 — Debt Securities Activity and Debt Outstanding.

TVA Bonds are traded in the public bond markets. TVA's Bonds are listed on the New York Stock Exchange ("NYSE") except for TVA's discount notes, the 2009 Series A and B power bonds, and the power bonds issued under TVA's electronotes<sup>®</sup> program. TVA's Putable Automatic Rate Reset Securities are traded on the NYSE under the exchange symbols "TVC" and "TVE." Other NYSE-listed bonds are assigned various symbols by the exchange, which are noted on the NYSE's web site. TVA has also listed certain bonds on foreign exchanges from time to time, including the Luxembourg, Hong Kong, and Singapore Stock Exchanges. See Item 1A, Risk Factors for additional information regarding the market for TVA's Bonds.

Although TVA Bonds are not obligations of the United States, TVA, as a corporate agency and instrumentality of the United States government, may be impacted if the sovereign credit ratings of the United States are downgraded. According to statements made by nationally recognized credit rating agencies, the credit ratings of the United States

government remain under negative pressure despite recent legislative developments, and additional fiscal measures may be needed to improve the outlook on the government's bond ratings. Additionally, TVA may be impacted by how the U.S. government addresses the situation of approaching its debt limit. In June 2013, one credit rating agency changed the outlook for the ratings of the United States from negative to stable, citing receding fiscal risks, and subsequently changed the outlook on TVA from negative to stable. In October 2013, one credit rating agency placed the ratings on the United States sovereign debt on rating watch negative, and subsequently placed TVA's rating on rating watch negative. Rating watch is typically event driven, while the negative status indicates a heightened probability of a downgrade. The outlook on TVA's ratings has subsequently been returned to stable, and is currently stable with all three agencies.

Lease Financings. TVA has entered into certain leasing transactions with special purpose entities to obtain third-party financing for its facilities. These special purpose entities are sometimes identified as variable interest entities ("VIEs") of which TVA is determined to be the primary beneficiary. TVA is required to account for these VIEs on a consolidated basis. TVA may seek to enter into similar arrangements in the future, but has no immediate plans to do so. See Note 10.

Table of Contents

Summary Cash Flows

A major source of TVA's liquidity is operating cash flows resulting from the generation and sales of electricity. Net change in cash and cash equivalents was \$(200) million, \$(1.1) billion, and \$734 million for the years ended September 30, 2015, 2014, and 2013, respectively. A summary of cash flow components for the years ended September 30 follows:

Cash provided by (used in):  
Operating Activities

2015 Compared to 2014

Net cash flows provided by operating activities increased by \$335 million in 2015 compared to 2014. This increase was due primarily to continued cost reduction initiatives, as well as decreases in nuclear and information technology projects, fewer outages in 2015 compared to 2014, decreases in the Kingston Fossil Plant ("Kingston") ash spill costs, and timing of revenue collections. These changes were partially offset by a decrease in Kingston insurance recovery proceeds, and increases in cash used for pension contributions, increases in TVA's margin requirements due to lower natural gas prices, increases in asset retirement project expenditures, and increases in cash used due to timing of payments.

2014 Compared to 2013

Net cash flows provided by operating activities increased by \$383 million in 2014 compared to 2013. This increase was a result of the October 1, 2013 base rate increase, increases in heating and cooling degree days, cost reduction initiatives, increases in Kingston insurance recovery proceeds, and changes in working capital components driven primarily by an increase in payables due to timing of purchases. These increases were partially offset by an increase in receivables, increase in pension contributions, and increase in costs deferred as a result of actions of TVA's regulator, primarily related to the deferred nuclear generating unit at Bellefonte. See Note 9 — Deferred Nuclear Generating Units.

Investing Activities

The majority of TVA's investing cash flows are due to investments in property, plant, and equipment for new generating assets and work on existing facilities, environmental projects, and transmission upgrades necessary to maintain reliability.

2015 Compared to 2014

Net cash flows used in investing activities increased by \$829 million in 2015 compared to 2014. This increase was driven by capacity expansion spending for the natural gas-fired generation facilities at Paradise Fossil Plant ("Paradise") and Allen Fossil Plant ("Allen"), the Ackerman Combined Cycle Plant acquisition, and the nuclear seismic upgrade projects for Browns Ferry and Sequoyah.

2014 Compared to 2013

Net cash flows used in investing activities increased \$371 million in 2014 compared to 2013. The increase primarily reflects the \$333 million increase in construction expenditures and \$39 million increase in nuclear fuel expenditures. The construction expenditures increase is primarily related to the ongoing work on Watts Bar Unit 2, capacity expansion related to the natural gas-fired generation facilities at Paradise and Allen, and environmental and clean air

projects. The increase in nuclear fuel expenditures was due to TVA's purchasing nuclear fuel in advance of the five outages scheduled for 2015.

Table of Contents

## Financing Activities

## 2015 Compared to 2014

The \$1.4 billion change in net cash provided by financing activities was primarily due to net issuances of debt of \$198 million in 2015 attributable to more power bonds maturing, as compared to net redemptions of debt of \$1.2 billion in 2014. The net redemptions in 2014 were primarily due to the strategic decision to use \$1.1 billion of cash on hand to meet some near-term capital funding needs. The net increase in cash provided by financing activities in 2015 was partially offset by the strategic decision to use \$200 million of cash on hand in 2015 to meet some capital funding needs.

## 2014 Compared to 2013

Net cash flows used in financing activities was \$1.3 billion in 2014 compared to \$522 million of net cash flows provided by financing activities in 2013. The increase in cash flows used in financing activities was primarily due to net redemptions of debt of \$1.2 billion during 2014, as compared to net issuances of debt of \$1.0 billion during 2013. This \$2.2 billion change in net debt issuances and redemptions was primarily due to less power bonds maturing in 2014 compared to 2013 and a strategic decision to use cash on hand during 2014 to meet some of its near-term capital funding needs.

## Cash Requirements and Contractual Obligations

The future planned capital expenditures for property, plant, and equipment additions, including clean air projects and new generation, are estimated to be as follows:

Capital Expenditures<sup>(1)</sup>

As of September 30

	Actual	Estimated Capital Expenditures		
	2015	2016	2017	2018
Watts Bar Unit 2	\$654	\$73	\$—	\$—
Other capacity expansion expenditures	998	931	819	581
Environmental expenditures	248	316	165	16
Coal combustion residual	84	103	155	161
Transmission expenditures	340	389	408	366
Other capital expenditures <sup>(2)</sup>	793	887	957	911
Total capital expenditures	\$3,117	<sup>(3)</sup> \$2,699	\$2,504	\$2,035

## Notes

(1) TVA plans to fund these expenditures with cash from operations and proceeds from power program financings. This table shows only expenditures that are currently planned. Additional expenditures may be required, among other things, for TVA to meet growth in demand for power in its service area or to comply with new environmental laws, regulations, or orders.

(2) Other capital expenditures are primarily associated with short lead time construction projects aimed at the continued safe and reliable operation of generating assets.

(3) The numbers above exclude AFUDC, capitalized during the year, related to construction expenditures, of \$214 million and include construction in progress expenditures accrued in Accounts payable and accrued liabilities of \$144 million. Additionally, the numbers above exclude \$5 million of Inventories, net and Other long-term assets related to the Combustion turbine asset acquisition.

TVA continually reviews its construction expenditures and financing programs. The amounts shown in the table above are forward-looking amounts based on a number of assumptions and are subject to various uncertainties. Amounts may differ materially based upon a number of factors, including, but not limited to, changes in assumptions about system load growth, environmental regulation, rates of inflation, total cost of major projects, and availability and cost of external sources of capital. See Forward-Looking Information.

In the near term, TVA's cash flows may be negatively impacted by investments in new generation, such as Watts Bar Unit 2, that are not expected to contribute positively to cash flows until put into service.

TVA has certain obligations and commitments to make future payments under contracts, including contracts executed in connection with certain of the planned construction expenses. The following table sets forth TVA's estimates of future payments at September 30, 2015. See Note 10, Note 11, Note 12, Note 14, Note 18, and Note 22 for a further description of these obligations and commitments.



Table of Contents

## Commitments and Contingencies

## Payments due in the year ending September 30

	2016	2017	2018	2019	2020	Thereafter	Total
Debt <sup>(1)</sup>	\$1,066	\$1,555	\$1,682	\$1,032	\$30	\$18,514	\$23,879
Interest payments relating to debt	1,209	1,196	1,107	1,032	1,022	17,981	23,547
Debt of VIEs	33	35	36	38	40	1,097	1,279
Interest payments relating to debt of VIEs	58	58	56	54	52	642	920
Lease obligations							
Capital	13	13	13	12	12	156	219
Non-cancelable operating	44	42	32	25	25	38	206
Purchase obligations							
Power	217	226	229	235	241	3,124	4,272
Fuel	1,282	711	635	508	335	1,448	4,919
Other	262	198	193	189	173	1,830	2,845
Environmental Agreements	47	36	6	3	2	8	102
Membership interests of variable interest entity subject to mandatory redemption	2	2	2	2	3	26	37
Interest payments related to membership interests of variable interest entity subject to mandatory redemption	3	2	2	2	2	13	24
Flood response commitment to NRC	11	1	—	—	—	—	12
Litigation settlements	13	—	—	—	—	—	13
Unfunded loan commitments	5	—	—	—	—	—	5
Environmental cleanup costs-Kingston ash spill	6	—	—	—	—	—	6
Long-term monitoring costs -- Kingston ash spill	1	1	1	1	1	10	15
Payments on other financings	104	104	104	96	73	232	713
Payments to U.S. Treasury - Return on Power Program Appropriation	5	6	7	7	8	77	110
Investment							
Retirement Plan <sup>(2)</sup>	209	—	—	—	—	—	209
Total	\$4,590	\$4,186	\$4,105	\$3,236	\$2,019	\$45,196	\$63,332

## Note

(1) Does not include noncash items of foreign currency exchange gain of \$21 million and net discount on sale of Bonds of \$108 million.

(2) The Tennessee Valley Authority Retirement System calculates TVA's minimum required annual contribution to the pension plan prior to the beginning of each fiscal year based on pension plan rules. The amount listed for 2016 is the minimum required contribution, and the calculation has not yet been completed for any years beyond 2016. See Note 21.

Edgar Filing: Tennessee Valley Authority - Form 10-K

In addition to the obligations above, TVA has energy prepayment obligations in the form of revenue discounts. See Note 1 — Energy Prepayment Obligations.

Energy Prepayment Obligations

Obligations due in the year ending September 30

	2016	2017	2018	2019	2020	Thereafter	Total
Energy Prepayment Obligations	\$ 100	\$ 100	\$ 100	\$ 10	\$—	\$—	\$ 310

EnergyRight® Solutions Program. TVA purchases certain loans receivable from its LPCs in association with the EnergyRight® Solutions program. Depending on the nature of the energy-efficiency project, loans may have a maximum term of five years or ten years. The loans receivable are then transferred to a third-party bank with which TVA has agreed to repay in full any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. As of September 30, 2015, the total carrying amount of the loans receivable, net of discount, was approximately \$156 million. Such amounts are not reflected in the Commitments and Contingencies table above. The total carrying amount of the financing obligation was approximately \$185 million at September 30, 2015. See Note 8 and Note 12 for additional information.

## Table of Contents

### Off-Balance Sheet Arrangements

At September 30, 2015, TVA had no off-balance sheet arrangements.

### Key Initiatives and Challenges

#### Generation Resources

**Nuclear Response Capability.** Since the events that occurred in 2011 at the Fukushima Daiichi Nuclear Power Plant ("Fukushima events"), the Nuclear Regulatory Commission ("NRC") has issued and adopted additional detailed guidance on the expected response capability to be developed by each nuclear plant site. TVA submitted integrated strategies to the NRC on February 28, 2013. TVA is currently implementing strategies and physical plant modifications to address the actions outlined in this guidance for all of its nuclear plants. As of September 30, 2015, TVA had spent \$236 million on modifications at all its nuclear plants, including Watts Bar Unit 2, and expects to spend an additional \$46 million to complete these modifications to address this guidance.

**Extreme Flooding Preparedness.** Updates to the TVA analytical hydrology model completed in 2009 indicated that under "probable maximum flood" conditions, some of TVA's dams might not have been capable of regulating the higher flood waters. A "probable maximum flood" is an extremely unlikely event; however, TVA is obligated to provide protection for its nuclear plants against such events. As a result, TVA installed a series of temporary barriers to raise the height of four TVA dams to manage the issue on an interim basis. Subsequent modifications have replaced the temporary barriers at three of the four dams, and work on the fourth dam is substantially complete.

Since 2009, TVA has performed further hydrology modeling of portions of the TVA watershed using updated modeling tools. TVA also completed a series of permanent modifications to the four dams initially addressed in 2009 as well as to several other dams identified through the more recent analytical work. The modifications addressed and rectified the potential for certain dams to be overtopped during a "probable maximum flood" event as well as the potential for certain other dams to become unstable under "probable maximum flood" conditions. These modifications were completed in the spring of 2015 with the exception of certain repairs at Fort Loudoun Dam that are expected to be completed in 2017. As of September 30, 2015, TVA had spent \$142 million on these modifications, and expects to spend an additional \$11 million to complete the modifications.

The revised hydrology models have been reviewed and approved by the NRC with regard to Watts Bar Unit 1. The NRC has indicated that the approval for Watts Bar Unit 1 will provide a basis for the subsequent application of that approval to Watts Bar Unit 2. TVA plans to seek NRC approval for similar modeling as applied to Sequoyah Units 1 and 2 and will subsequently address Browns Ferry conditions as needed.

The hydrology analyses discussed above relate to the current operation and current requirements of TVA's existing nuclear fleet as well as to Watts Bar Unit 2. In addition, the NRC has required all utilities to reexamine flood hazards at nuclear plants in light of the lessons learned from the nuclear accident at Fukushima Daiichi. In March 2015, TVA sent its flood hazard analyses to the NRC for all three nuclear sites considering the NRC's Fukushima-related requirements. Minor modifications to some of TVA's nuclear plants may result from these analyses, and further modifications to TVA's dams based on this analysis are expected. Temporary protection measures are in place in the interim while the NRC review is underway.

**NRC Seismic Assessments.** On May 9, 2014, the NRC notified licensees of nuclear power reactors in the central and eastern United States of the results of seismic hazard screening and prioritization evaluations performed by unit owners and reviewed by the NRC staff. Because the seismic hazards for Bellefonte Nuclear Plant ("Bellefonte"), Browns Ferry, Sequoyah, and Watts Bar had increases in seismic parameters beyond the technical information available when the plants were designed and licensed, TVA must conduct seismic risk evaluations for these plants. TVA must complete the evaluation for Watts Bar by June 30, 2017, and the evaluations for Browns Ferry and

Sequoyah by December 31, 2019. The evaluation dates for Bellefonte have not yet been determined because of Bellefonte's deferred construction status. These evaluations could result in TVA having to make modifications to one or more of its nuclear plants. Cost estimates for any required modifications cannot be developed until after the evaluations are complete, but costs for modifications could be substantial.

In addition to the reevaluations, TVA has mitigated seismic risk to beyond the original design by performing seismic upgrades for Browns Ferry and Sequoyah. Specific seismic upgrades performed at Watts Bar as part of the Unit 2 licensing efforts go beyond the seismic upgrades at Browns Ferry and Sequoyah to mitigate the risk of extensive modifications that may be dictated by the seismic hazard reevaluations.

Watts Bar Unit 2. TVA's Watts Bar Unit 2 construction project continues on track with an estimate to complete of approximately \$4.5 billion and commercial operations by June 2016, which is consistent with the expectations approved by the Board in April 2012.

On October 22, 2015, the NRC approved the operating license for Watts Bar Unit 2. The license will expire in 2055. Based on construction and testing progress to date, fuel load is currently forecasted for the first quarter of 2016. Challenges that

Table of Contents

could potentially affect the forecast include completing complex work and required documentation, addressing emergent work identified during testing, and successfully transitioning the site into dual unit operation. See Note 22 — Legal Proceedings — Administrative Proceedings Regarding Watts Bar Unit 2.

Bellefonte Unit 1. TVA's 2015 IRP, adopted by the TVA Board in August 2015, does not envision any immediate needs for significant baseload plants such as Bellefonte. Work on the Bellefonte Unit 1 site was slowed in 2014, and TVA has been focused on preserving Bellefonte for potential future development.

Spent Fuel. Under the Nuclear Waste Policy Act of 1982, generators of nuclear energy were historically required to pay a fee of one-tenth of a cent per kWh into the DOE nuclear waste fund. TVA's annual payments into this fund ranged from \$50 million to \$55 million in recent years. In November 2013, the U.S. Court of Appeals for the District of Columbia Circuit ordered the DOE to stop collecting nuclear waste fees until either (1) the DOE complies with the Nuclear Waste Policy Act of 1982 or (2) the U.S. Congress enacts an alternative waste management plan. In accordance with the court's order, the DOE submitted a proposal to the U.S. Congress in January 2014 to change the nuclear waste fee to zero, and as of May 16, 2014, the DOE ceased collecting this fee. TVA avoided approximately \$20 million of nuclear fuel expense in 2014, and approximately \$52 million of nuclear fuel expense in 2015. Any such savings will be passed on to TVA's customers through the fuel cost adjustment.

Coal-Fired Units. The decision to idle or retire coal-fired units from TVA's generation fleet is being influenced by several factors including the Environmental Agreements, environmental legislation, the cost of adding emission control equipment and other environmental improvements, fuel prices, conditions of its aging plants, and demand for energy. Under the Environmental Agreements, TVA committed, among other things, to retire, on a phased schedule, 18 coal-fired units. As of September 30, 2015, TVA had retired 13 coal-fired units with a summer net capability of 2,432 megawatts ("MW"). The retirements of ten of these units, with a summer net capability of 1,370 MW, were carried out to comply with the Environmental Agreements. In addition, as of September 30, 2015, TVA had removed from service, mothballed, and/or idled an additional seven coal-fired units with a summer net capability of 1,250 MW. Thus, the total number of coal-fired units that are no longer active is 20 with a summer net capability of 3,682 MW. TVA continues to assess its power generating facilities.

Under the terms of the Environmental Agreements, TVA was required to decide whether to install additional air pollution controls on Units 1 and 4 at Shawnee Fossil Plant ("Shawnee"), convert those units to burn biomass, or retire them by December 31, 2017. TVA completed an Environmental Assessment during the first quarter of 2015, and on December 30, 2014, the TVA Board approved installation of air pollution controls (i.e., selective catalytic reduction systems ("SCRs") and dry scrubbers) on Units 1 and 4 at Shawnee with an estimated cost of \$185 million. On December 31, 2014, the decision to install additional air pollution controls was communicated to the Environmental Protection Agency ("EPA") and the other participants in accordance with terms of the Environmental Agreements. These units have a combined summer net capability of 268 MW.

Upon the completion of natural gas-fired generation facilities at the Paradise site, coal-fired Units 1 and 2 at Paradise with a summer net capability of 1,230 MW will be retired, and upon the completion of a natural gas-fired generation facility at the Allen site, coal-fired Units 1-3 at Allen with a summer net capability of 741 MW will be retired. TVA plans to retire the Allen units before December 31, 2018, Colbert Fossil Plant ("Colbert") Unit 5 with a summer net capability of 472 MW no later than December 31, 2015, and Colbert Units 1-4 with a summer net capability of 712 MW before April 16, 2016. During 2015, TVA retired Widows Creek Unit 7 and 8 with a summer net capability of 938 MW on September 30, 2015, and the Board approved the retirement of Johnsonville Units 1-4 with a summer net capability of 428 MW by December 31, 2017. Additionally, TVA plans to retire Johnsonville Units 5-10 with a summer net capability of 778 MW by December 31, 2015. See Natural Gas-Fired Units below.

Coal Combustion Residual Facilities. TVA has committed to a programmatic approach to the elimination of wet storage of coal combustion residual ("CCR") within the TVA service area. The CCR program is ongoing, with approximately \$760 million spent as of September 30, 2015. The EPA published its CCR rule on April 17, 2015, and the TVA CCR program is being adjusted to incorporate the requirements of the published rule.

Under TVA's CCR Conversion Program, TVA has committed to (1) convert all operational coal plants to dry CCR storage, (2) close all wet storage facilities, and (3) meet all applicable state and federal regulations. To carry out its CCR Conversion Program, TVA is undertaking the following actions that are estimated to cost approximately \$1.3 billion to complete.

Dry generation and dewatering projects. Conversion of coal plant CCR wet processes to dry generation or dewatering is underway at Kingston, Gallatin, Cumberland, Shawnee and Paradise. These projects are scheduled to be completed by December 2022.

Landfills. Lined and permitted dry storage facilities have been constructed at Bull Run and Kingston, are under construction at Gallatin, and are in the planning or engineering phases at Cumberland, Paradise, and Shawnee.

Wet CCR impoundment closures. TVA is planning to close wet CCR impoundments in accordance with federal and state requirements when (1) coal plants are converted to dry CCR processes and dry storage landfills become operation or (2) plant operations cease. Closure project schedules and costs are driven by the selected closure technology (e.g., cap and close

Table of Contents

in place or clean closure). As environmental studies are performed and closure methodologies are determined, detailed project schedules and estimates will be prepared.

Groundwater monitoring. TVA's implementation of the EPA's CCR rule includes additional engineering, analysis and installation of a comprehensive groundwater monitoring program.

The overall CCR Conversion Program is scheduled to be completed by 2022 with the exception of a new landfill at Shawnee which will be required to accommodate the addition of air pollution controls at an estimated cost of approximately \$70 million and is scheduled to be completed by 2026. Once the new landfill is in service, the existing bottom ash pond and dry stack will be closed in accordance with federal and state requirements. Due to the size, scope, and selected method of closure, it is estimated that the closure of the ponds at Gallatin will be completed by 2024. Once the CCR Conversion Program is completed, TVA will continue to undertake certain CCR projects after 2022 to support long-term plant generation, including projects for landfill expansions and closing the existing sections once they reach capacity.

Natural Gas-Fired Units. During 2014, the TVA Board approved the construction of two natural gas-fired generation facilities. One facility, with an expected generation capacity of approximately 1,000 MW, will be constructed at the Allen site at a cost not to exceed \$975 million. The second facility, with an expected generation capacity of approximately 1,000 MW, will be constructed at TVA's Paradise site at a cost not to exceed \$1.1 billion. A lawsuit has been filed challenging TVA's Paradise decision. See Note 22 — Legal Proceedings — National Environmental Policy Act Challenge at Paradise Fossil Plant. An injunction or court order that delays TVA's plans at Paradise could increase the project's cost. Upon completion of each facility, existing coal-fired units at each site will be retired with the exception of Paradise Unit 3, which would continue to be operated on the Paradise site. In addition, TVA purchased a 700 MW combined-cycle gas plant near Ackerman, Mississippi during the third quarter of 2015. TVA had purchased the electricity generated by the plant since 2008. See Note 6.

Small Modular Reactors. TVA plans to submit an Early Site Permit Application ("ESPA") for review by the NRC in the second quarter of 2016. This submittal is based on the development of a Plant Parameter Envelope reflecting application for two or more small modular reactors ("SMR") units at TVA's Clinch River site in Oak Ridge, Tennessee. The design and vendor for the SMR technology has not yet been selected. TVA and DOE have entered into an interagency agreement to jointly fund licensing activities for the Clinch River site with DOE reimbursement of up to 50 percent of TVA's eligible costs through 2020.

TVA is developing the Clinch River site on a schedule that supports submittal of a combined construction and operating license ("COL") application in the second half of 2018, in conjunction with supporting NRC's review of the ESPA. This submittal is subject to sufficient progress being made by the SMR vendor(s) with their design certification(s), and a TVA decision to select a specific SMR technology and proceed with development of a COL application in 2017.

Future Capacity Challenges. Although the 2015 IRP recommended the inclusion of more traditional resources, primarily gas-fired, additional capacity will come with its own implementation challenges in the areas of siting and permitting both for the units themselves and for the transmission lines and gas pipelines associated with them. TVA has several teams working on various aspects of the siting and permitting work necessary to ensure that when these resources are needed as part of the generation portfolio, TVA will be better positioned to add them to the resource mix.

Distributed Generation. As technologies for producing energy on solar, small gas, and other types of sites are evolving, they are becoming cost competitive, and consumers have expressed greater interest in utilizing these technologies for their own needs. Previously, the limited impact of electricity from the small numbers of these distributed generation sites was absorbed within the capacity of a system the size of TVA's. However, as the amount of distributed generation grows on the TVA system, the ability of the system to reliably cope with these generation sources becomes more challenging while at the same time reducing the need for TVA's generation resources.

While TVA owns and operates its high-voltage transmission grid, the distribution system is actually a network of grids belonging to LPCs, each with its own unique characteristics and operational challenges. Renewable resources installed on the distribution grid necessitate the involvement of entities in addition to TVA, especially the LPCs. This is especially true for small-scale distributed (rooftop) solar resources. Although TVA did not include small-scale rooftop solar as a resource option in its 2015 IRP, it did include small-scale commercial solar as an option, and it analyzed significant levels of distributed generation penetration in the scenarios to help it begin to understand how the increasing use of distributed generation will affect the TVA power system. As distributed generation continues to expand across the Tennessee Valley, TVA and LPCs will continue to focus significant attention on the safety and reliability impact of these resources as they are interconnected to the grid, as well as how to price such interconnections. Due to numerous assumptions including adoption rates, technology, and location of these distributed resources, TVA cannot currently determine financial implications to its operations.



## Table of Contents

### Dam Safety Assurance Initiatives

TVA has an established dam safety program, which includes procedures based on the Federal Guidelines for Dam Safety, with the objective of reducing the risk of a dam safety event. The program is comprised of various engineering activities for all of TVA's dams including safety reassessments using modern industry criteria and the new probable maximum flood and site-specific seismic load cases.

One aspect of the guidelines is that dam structures will be periodically reassessed to assure that TVA's dams meet current design criteria. These reassessments include material sampling of the dam and foundational structures and detailed engineering analysis. TVA is currently performing reassessments on its 49 dam projects. Twenty-eight reassessments have been completed through 2015, and ten additional assessments will be completed by the end of 2016. The remaining eleven assessments are expected to be initiated in 2016 and are scheduled to be completed by the end of 2017. To date, TVA has spent \$42 million on the dam safety assurance program, and TVA expects to spend an additional \$23 million in 2016.

**Pickwick Landing Dam.** As part of the dam safety reassessments, initial data from a seismic stability assessment of Pickwick Landing Dam in western Tennessee showed the factor of safety during a large earthquake for the south embankment dam (an earthen section south of the concrete structure of the dam) was unacceptable based on current TVA and industry standards. Conditions at the dam have not changed; however, in the remote chance that a large seismic event occurs along the New Madrid Fault in Tennessee, it may cause damage to the earthen embankment dam. In order to ensure public safety and to evaluate Pickwick Landing Dam further, TVA has decided to implement risk reduction measures which include a dam failure warning system. A project is underway to further analyze the embankment, perform environmental reviews, and develop design remediation plans. Cost estimates for any required remediation cannot be developed until after the analyses are complete.

**Boone Dam.** In October 2014, a sink hole was discovered near the base of the earthen embankment at Boone Dam, and a small amount of water and sediment was found seeping from the river bank below the dam. The reservoir was drawn down below winter pool level in early 2015 and will remain at a lowered level as a precautionary measure to ensure the safety of the public while also allowing a more detailed investigation of the seepage.

After extensive investigation, TVA has identified underground pathways contributing to the seepage and has prepared a plan to repair the dam. The plan involves building a structure known as a composite seepage barrier in the dam's earthen embankment. The project is pending environmental review through TVA's National Environmental Policy Act ("NEPA") process. To reduce downstream risk during construction, the reservoir will remain at its lowered level. TVA will continue working with the community to help mitigate local impacts of the extended drawdown. Construction on the composite seepage barrier is expected to begin by early 2016 following completion of the Environmental Assessment. Until then, TVA will continue test grouting and other activities at the site in support of the project design. Benchmarking durations and costs of similar activities at other facilities to complete composite walls have ranged from \$200 million to \$300 million with a range of five to seven years to complete. The cost and duration for the remediation of Boone Dam will be determined upon finalization of design and construction plans which are scheduled to be completed in February 2016.

### Major Capital Projects

The table below summarizes major projects of at least \$1.0 billion, as approved by the TVA Board, which support TVA's strategic imperatives related to having a diversified, cleaner portfolio, providing electricity at the lowest feasible rate, responding to changing regulatory requirements including environmental regulations, and meeting operational challenges related to generation reliability. See Liquidity and Capital Resources and Key Initiatives and Challenges.

Edgar Filing: Tennessee Valley Authority - Form 10-K

Summary Table of Major Projects

Projects	Estimated Project Cost (in billions)	Ending Estimated In-Service Date
Capacity Expansion Projects		
Watts Bar Unit 2	\$4.5	June 2016
Paradise combined cycle plant	1.1	June 2017
Allen combined cycle plant	1.0	June 2018
Environmental		
Gallatin clean air controls	1.1	December 2017

Renewable Energy

The TVA Board approved the establishment of a power purchase agreement for electricity from a planned 80 MW solar farm in Lauderdale County, Alabama at its meeting on February 12, 2015. Commercial operation of the new solar installation is expected in November 2016, subject to successfully meeting conditions that include environmental acceptability and reliable integration into TVA's transmission system.

## Table of Contents

### Continuous Improvement Initiatives

During 2014 and 2015, TVA undertook cost-reduction initiatives with the goal of reducing operating and maintenance costs by \$500 million by the end of 2015 as compared to its 2013 budget. The objectives of the initiatives are to keep rates low, keep reliability high, and continue to fulfill TVA's broader mission of environmental stewardship and economic development. At the end of 2015, TVA had exceeded its \$500 million target on operating and maintenance cost savings by over \$100 million.

TVA plans to continue to evaluate its operations after having achieved its 2015 cost reduction goal. These evaluations may result in additional cost-saving initiatives in future years and could include additional workforce reductions, unit retirements, and site closures. See Note 3.

### Regulatory Compliance

**Environmental Mitigation.** Of the \$290 million that TVA is required to spend on environmental mitigation projects under the Environmental Agreements, TVA has already spent approximately \$188 million in implementing energy efficiency, electric vehicle, and renewable energy projects. These expenditures on environmental mitigation projects are in addition to the decisions TVA made under the Environmental Agreements to control, convert, or retire additional coal-fired units. These decisions include installation of air pollution controls (i.e., SCRs and dry scrubbers) on the four coal-fired units at the Gallatin Fossil Plant and on Units 1 and 4 at Shawnee.

**Transmission Issues.** TVA anticipates expenditures to increase as a result of both new and evolving compliance regulations. The North American Electric Reliability Corporation ("NERC") approved revisions to the Transmission Planning ("TPL") Reliability Standards in 2013. TVA has spent \$4 million on existing transmission facilities and anticipates spending an additional \$57 million between 2016 and 2018 to ensure compliance with the 2013 version of the TPL standards. Total costs of compliance with the standard, including those beyond 2018, are estimated to be \$652 million.

### Ratemaking

TVA's Board approved changes to its wholesale and large customer base rate structures and associated pricing products at its August 21, 2015 meeting. TVA worked closely with its customers on the development of TVA's long-term pricing direction with the objective of maintaining competitive and affordable rates. The pricing strategy process considered cost of service, rate structures, pricing products, and TVA's competitive position across rate classes. Rate actions taken at that Board meeting included small changes to revenue allocation, changes to the environmental adjustment to conform to the new base rate structures, changes to the manner in which fuel costs are recovered, and a rate adjustment. This rate adjustment took effect on October 1, 2015, and is expected to provide an increase in fiscal year 2016 revenues of approximately \$200 million. See Item 1, Business— Rates — Rate Methodology.

### Safeguarding Assets

**Physical Security — Non-Nuclear Asset Protection.** TVA utilizes a variety of security technologies, security awareness activities, and security personnel to prevent sabotage, vandalism, and thefts. Any of these activities could negatively impact the ability of TVA to generate, transport, and deliver power to its customers. TVA's Police and Emergency Management are active participants with numerous professional and peer physical security organizations in both the electric industry and law enforcement communities.

Recent physical attacks on transmission facilities at other utilities across the country have heightened awareness. TVA is working with the Department of Homeland Security ("DHS"), FERC, NERC, SERC Reliability Corporation, North American Transmission Forum, and other utilities to implement industry approved recommendations and standards.

Nuclear Security. Nuclear security is carried out in accordance with federal regulations as set forth by the NRC. These regulations are designed for the protection of TVA's nuclear power plants, the public, and employees from the threat of radiological sabotage and other nuclear-related terrorist threats. TVA has nuclear security forces to guard against such threats.

Cyber Security. TVA operates in a highly regulated environment. TVA's cyber security program aligns or complies with the Federal Information System Management Act, the NERC Critical Infrastructure Protection requirements, and the NRC requirements for cyber security, as well as industry best practices. As part of the U.S. government, TVA coordinates with and works closely with the DHS and the United States Computer Emergency Readiness Team ("US-CERT"). US-CERT functions as a liaison between the DHS and the public and private sectors to coordinate responses to security threats from the internet. TVA is also participating in studies funded through the DOE to identify, design, and test new solutions for protecting critical infrastructure from cyber attacks.

Although TVA has continued to experience increased cyber activity, none of the attacks have impacted TVA's ability to operate as planned or compromised data which could involve TVA in legal proceedings. See Item 1A, Risk Factors —

Table of Contents

Operational Risks — TVA's facilities and information infrastructure may not operate as planned due to physical and cyber threats to TVA's security.

Critical Accounting Policies and Estimates

TVA's consolidated financial statements are prepared in accordance with GAAP, which require management to make estimates, judgments, and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Each of these estimates varies in regard to the level of judgment involved and its potential impact on TVA's financial results. Estimates are deemed critical either when a different estimate could have reasonably been used, or where changes in the estimate are reasonably likely to occur from period to period, and such use or change also would materially impact TVA's financial condition, results of operations, or cash flows. TVA's critical accounting policies are also discussed in Note 1 of the Notes to Consolidated Financial Statements in this Annual Report.

TVA believes that its most critical accounting policies and estimates relate to the following:

- Regulatory Accounting
- Asset Retirement Obligations
- Pension and Other Post-Retirement Benefits

Management has discussed the development, selection, and disclosure of critical accounting policies and estimates with the Audit, Risk, and Regulation Committee of the TVA Board. While TVA's estimates and assumptions are based on its knowledge of current events and actions it may undertake in the future, actual results may ultimately differ from these estimates and assumptions.

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
Regulatory Accounting	TVA assesses whether the regulatory assets are probable of future recovery by considering factors such as applicable regulatory changes, potential legislation, and changes in technology. Based on these assessments, TVA believes the existing regulatory assets are probable of recovery. This determination reflects the current regulatory and political environment and is subject to change in the future.	<p>TVA has not made any material changes in the accounting policy used to record regulatory assets and liabilities during the past three fiscal years.</p> <p>TVA does not believe there is a reasonable likelihood that there will be a material change in the estimates or assumptions used to record regulatory assets and liabilities.</p> <p>If future recovery of regulatory assets ceases to be probable, or any of the other factors described herein cease to be applicable, TVA would be required to write off these costs and recognize them in earnings.</p>
The TVA Board is authorized by the TVA Act to set rates for power sold to customers; thus, TVA is "self-regulated." Additionally, TVA's regulated rates are designed to recover its costs of providing electricity. In view of demand for electricity and the level of competition, TVA has assumed that rates, set at levels that will recover TVA's costs, can be charged and collected. As a result of these factors, TVA records certain assets and liabilities that result from the regulated ratemaking process that would not be recorded under GAAP for non-regulated entities. Regulatory assets generally represent incurred costs that have been deferred because such costs are probable of future		

recovery in customer rates.

Regulatory liabilities generally represent obligations to make refunds to customers for previous collections of costs that are not likely to be incurred or deferral of gains that will be credited to customers in future periods. The timeframe over which the regulatory assets are recovered from customers or regulatory liabilities are credited to customers is subject to annual TVA Board approval. At September 30, 2015, TVA had \$10.9 billion of Regulatory assets and \$166 million of Regulatory liabilities.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<p>Asset Retirement Obligations</p> <p>TVA recognizes legal obligations associated with the future retirement of certain tangible long-lived assets. These obligations relate to TVA's generating facilities, including coal-fired, nuclear, hydroelectric, and natural gas and/or oil-fired. They also pertain to coal ash impoundments, transmission facilities, and other property-related assets. Activities involved with the retirement of these assets could include decontamination and demolition of structures, removal and disposal of wastes, and site restoration. Revisions to the estimates of asset retirement obligations ("AROs") are made whenever factors indicate that the timing or amounts of estimated cash flows have changed. Any accretion or depreciation expense related to these liabilities and assets is charged to a regulatory asset. See Note 9 — Nuclear Decommissioning Costs and Non-Nuclear Decommissioning Costs and Note 13.</p>		

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<p>Nuclear Decommissioning</p> <p>Utilities that own and operate nuclear plants are required to recognize a liability for legal obligations related to nuclear decommissioning. An equivalent amount is recorded as an increase in the value of the capitalized asset and allocated to expense over the useful life of the asset. The initial obligation is measured at its estimated fair value using various judgments and assumptions. Fair value is developed using an expected present value technique that is based on assumptions of market participants and that considers estimated retirement costs in current period dollars that are inflated to the anticipated decommissioning date and then discounted back to the date the ARO was incurred. Decommissioning cost studies are updated for each of TVA's nuclear units at least every five years. Changes in assumptions and estimates included within the calculations of the fair value of AROs could result in significantly different results than those identified and recorded in the financial statements.</p> <p>TVA periodically reviews its estimated ARO costs. Any change to the ARO asset is recognized and prospectively recognized over the remaining life of the long-lived asset.</p> <p>At September 30, 2015, the present value of the estimated future nuclear decommissioning cost recognized in the financial statements was \$2.2 billion and was included in AROs,</p>	<p>The following key assumptions can have a significant effect on estimates related to the nuclear decommissioning costs reported in TVA's nuclear ARO liability:</p> <p>Timing - In projecting decommissioning costs, two assumptions must be made to estimate the timing of plant decommissioning. First, the date of the plant's retirement must be estimated. (At a multiple unit site, the estimated retirement date is based on the unit with the longest license period remaining.) Second, an assumption must be made on the timing of the decommissioning. Prior to June 30, 2014, TVA based its decommissioning cost estimates on cost elements prescribed by the NRC to dismantle and decommission the radioactive portion of each site with the assumption that decommissioning would occur within the first seven years after plant shut down, which approximates the DECON method of decommissioning. The DECON method requires that radioactive contamination is removed from a site and safely disposed of or decontaminated to a level that permits the site to be released for unrestricted use shortly after it ceases operation. On June 30, 2014, TVA recorded a change in estimate based on the implementation of site-specific decommissioning cost studies. Additionally, TVA determined it appropriate to reflect an increase in the probability that certain of its nuclear operating licenses will be extended and that there is a probability that it will be able to delay ultimate decommissioning activities under a</p>	<p>A 10 percent change in TVA's ARO for nuclear decommissioning cost at September 30, 2015, would have affected the liability by approximately \$220 million.</p>



and the unamortized regulatory asset related to ARO costs of \$1.0 billion was included in Regulatory assets.

SAFSTOR method of decommissioning. The SAFSTOR method allows nuclear facilities to be placed and maintained in a condition that allows the facilities to be safely stored and subsequently decontaminated to levels that permit release for unrestricted use. As such, TVA ascribed probabilities to both the SAFSTOR and DECON methods of decommissioning in order to estimate its decommissioning obligation. Decommissioning cost studies will be updated for each of TVA's nuclear units at least every five years. While the impact of these assumptions cannot be determined with precision, either assuming license extension or extending the timing of decommissioning can significantly change the present value of these obligations. On September 28, 2015, the operating licenses for Sequoyah Units 1 and 2 were granted 20-year renewals, resulting in an increase to TVA's ARO of approximately \$36 million.

Technology and Regulation - There is limited experience with actual decommissioning of large nuclear facilities. Changes in technology and experience as well as changes in regulations regarding nuclear decommissioning could cause cost estimates to change significantly. TVA's cost studies assume current technology and regulations.

Discount Rate - TVA uses rates between 1.63 percent and 5.52 percent to calculate the present value of the weighted estimated cash flows required to satisfy TVA's decommissioning obligation.



Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<p>Non-Nuclear Decommissioning</p> <p>The present value of the estimated future non-nuclear decommissioning cost was \$1.7 billion at September 30, 2015. This decommissioning cost estimate involves estimating the amount and timing of future expenditures and making judgments concerning whether or not such costs are considered a legal obligation. Estimating the amount and timing of future expenditures includes, among other things, making projections of the timing and duration of the asset retirement process and how costs will escalate with inflation.</p>	<p>The following key assumptions can have a significant effect on estimates related to the non-nuclear decommissioning costs:</p> <p>Timing – In projecting non-nuclear decommissioning costs, the date of the asset’s retirement must be estimated. In instances where the retirement of a specific asset will precede the retirement of the generating plant, the anticipated retirement date of the specific asset is used. Additionally, TVA expects to incur certain ongoing costs subsequent to the initial asset retirement.</p> <p>Method - TVA develops its cost estimates based on likelihood of decommissioning method where options exist in fulfilling legal obligations, (e.g., cap and close in place or clean closure for coal ash impoundments). Decommissioning method is determined based on several factors including available technologies, environmental studies, cost factors, resource availability, and timing requirements. As these factors are considered and decommissioning methods are determined, the detailed project schedules and estimates are adjusted.</p> <p>Technology and Regulation – Changes in technology and experience as well as changes in regulations regarding non-nuclear decommissioning could cause cost estimates to change significantly. TVA’s cost estimates generally assume current technology and regulations.</p>	<p>TVA has not made any material changes in the accounting policy used to record the non-nuclear ARO liability during the past three fiscal years.</p> <p>The actual decommissioning costs may vary from the derived estimates because of changes in current assumptions, such as the assumed dates of decommissioning, changes in regulatory requirements, changes in technology, and changes in the cost of labor, materials, and equipment.</p> <p>A 10 percent change in TVA's ARO for non-nuclear decommissioning costs at September 30, 2015, would have affected the liability by approximately \$170 million.</p>

In April 2015, the EPA published its final rule governing coal combustion residuals, which regulates landfill and impoundment location, design, and operations; dictates certain pond-closure conditions; and establishes groundwater monitoring and closure and post-closure standards. As a result of the ruling, TVA made revisions to the assumptions and estimates used to calculate its coal ash ARO's. Increases to estimated project costs, including expansion of work scope and higher costs of materials, resulted in an increase of \$469 million of the ARO liability during the year ended September 30, 2015. TVA continues to evaluate the impact of the rule on its operations, including cost and timing estimates of related projects. As a result, further adjustments to its ARO liabilities may be required as estimates are refined.

Discount Rate – TVA uses its incremental borrowing rate over a period consistent with the remaining timeframe until the costs are expected to be incurred to calculate the present value of the weighted estimated cash flows required to satisfy TVA's non-nuclear decommissioning obligation. At September 30, 2015, the discount rates used in the calculations range from 0.21 percent to 11.00 percent.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<b>Pension and Other Post-Retirement Benefits</b>		
<p>TVA sponsors a defined benefit pension plan that is qualified under Internal Revenue Service rules and covers substantially all of its full-time annual employees hired prior to July 1, 2014. The Tennessee Valley Authority Retirement System ("TVARS"), a separate legal entity governed by its own board of directors, administers the qualified defined benefit pension plan. TVA also provides a Supplemental Executive Retirement Plan ("SERP") to certain executives in critical positions, which provides supplemental pension benefits tied to compensation levels that exceed limits imposed by IRS rules applicable to the qualified defined benefit pension plan. Additionally, TVA provides post-retirement health care benefits for most of its full-time employees who reach retirement age while still working for TVA.</p>	<p>TVA's pension and other post-retirement benefits contain uncertainties because they require management to make certain assumptions related to TVA's cost to provide these benefits. Numerous factors are considered including the provisions of the plans, changing employee demographics, various actuarial calculations, assumptions, and accounting mechanisms. The most significant of these factors are discussed below.</p> <p><b>Expected Return on Plan Assets.</b> The qualified defined benefit pension plan is the only plan that is funded with qualified plan assets. In determining its expected long-term rate of return on pension plan assets, TVA uses a process that incorporates actual historical asset class returns and an assessment of expected future performance and takes into consideration external actuarial advice and asset class factors. Asset allocations are periodically updated using the pension plan asset/liability studies, and are part of the determination of the estimates of long-term rates of return. The current asset allocation policy approved by the TVARS Board diversifies plan assets across multiple asset classes so as to minimize the risk of large losses. The asset allocation policy is designed to be dynamic in nature and responsive to changes in the funded status of TVARS. Changes in the expected return rates are based on annual</p>	<p><b>Accounting Mechanisms.</b> In accordance with current accounting guidance, TVA utilizes a number of accounting mechanisms that reduce the volatility of reported pension expense. Differences between actuarial assumptions and actual plan results are deferred and are amortized into periodic expense only when the accumulated differences exceed 10 percent of the greater of the projected benefit obligation or the market-related value of plan assets. If necessary, the excess is amortized over the average remaining service period of active employees.</p> <p><b>Expected Return on Plan Assets.</b> TVA recognizes the impact of asset performance on pension expense over a three-year phase-in period through a market-related value of assets calculation. Since the market-related value of assets recognizes investment gains and losses over a three-year period, the future value of assets will be impacted as previously deferred gains or losses are recognized. As a result, losses that the pension plan assets experience may have an adverse impact on pension expense in future years depending on whether the actuarial losses at each measurement date exceed 10 percent of the greater of the projected pension benefit obligation or the market-related value of plan assets in accordance with current accounting methodologies.</p> <p>The actuarial gain (loss) related to the difference between expected and actual return on pension plan assets for 2015 and 2014 was \$(762) million and \$213 million, respectively. Compared</p>

studies performed by third party professional investment consultants. Considering there were no changes to the asset allocation policy and after reviewing the 2015 annual study and the current outlook on capital markets, TVA management decided to maintain the expected return on assets at 7.00 percent, which will be used to measure 2016 net periodic benefit cost. TVA used an expected rate of return of 7.00 percent to measure benefit costs in 2015 and used 7.25 percent to measure benefit costs in 2014 and 2013.

with the assumed returns of 7.00 and 7.25 percent, the 2015 and 2014 actuarial gain (loss) is due to the actual rates of return on the fair value of assets of (4.48) percent and 9.29 percent, respectively. The differences between expected and actual returns that result in an actuarial gain or loss are recognized as a decrease or increase, respectively, in the related regulatory asset and the projected pension benefit obligation. A higher expected rate of return assumption decreases the net periodic pension benefit cost, whereas a lower expected rate of return assumption increases the net periodic pension benefit cost. A 0.25 percent decrease in the expected rate of return on plan assets would increase the 2015 net periodic pension cost by \$16 million.

Changes in the expected rate of return on pension plan assets do not affect TVA's post-retirement benefit plans because TVA does not separately set aside assets to fund such benefits. TVA funds its post-retirement plan benefits on an as-paid basis. These changes in the expected rate of return on pension plan assets also do not impact the Supplemental Executive Retirement Plan ("SERP") as any assets set aside for that plan are not considered plan assets under GAAP.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p>Discount Rate. In the case of selecting an assumed discount rate, TVA reviews market yields on high-quality corporate debt and long-term obligations of the U.S. Treasury and endeavors to match, through the use of a hypothetical bond portfolio, instrument maturities with the maturities of its pension obligations in accordance with the prevailing accounting standards. The selected bond portfolio is derived from a universe of high quality corporate bonds of Aa quality or higher. After the bond portfolio is selected, a single interest rate is determined that equates the present value of the plan's projected benefit payments discounted at this rate with the market value of the bonds selected. The discount rates used to determine the pension and other post-retirement benefit obligations were 4.50 percent and 4.65 percent, respectively, at September 30, 2015. At September 30, 2014, the discount rates used to determine the pension and other post-retirement benefit obligations were 4.45 percent and 4.50 percent, respectively. The discount rate assumptions used to determine the obligations at year-end are used to determine the net periodic benefit cost for the following year. TVA will use discount rates of 4.50 percent and 4.65 percent to estimate its 2016 pension and other post-retirement net periodic benefit costs, respectively. The discount rate is somewhat volatile because it is determined based upon the prevailing rate as of the measurement date.</p> <p>Mortality. Mortality assumptions are based upon actuarial projections in</p>	<p>Discount Rate. A higher discount rate decreases the plan obligations and correspondingly decreases the net periodic pension and net post-retirement benefit costs for those plans where actuarial losses are being amortized. On the other hand, a lower discount rate increases net periodic pension and net periodic post-retirement benefit costs.</p> <p>Assuming the other components of the calculation are held constant and excluding any impact for unamortized gains or losses, a 0.25 percent decrease would increase the 2015 net periodic pension cost by \$18 million and the 2015 projected pension benefit obligation by \$404 million.</p> <p>As the mortality assumptions improve, (e.g., assume participants are living longer) the benefit obligation increases.</p> <p>The change to the mortality assumption increased the pension and</p>

combination with actuarial studies of the actual mortality experience of TVA's pension and post-retirement plan participants. Based upon a review of the 2013 actuarial experience study, TVA adopted the Society of Actuaries ("SOA") RP-2000 base table projected with a modified improvement scale for purposes of measuring its pension and other post-retirement benefits as of September 30, 2013. In 2014, the SOA released a new base table (RP-2014) and improvement scale (MP-2014). However, based upon analysis of the 2014 actuarial experience study, the results indicated that mortality experience remained in line with the assumptions adopted in 2013. Therefore, TVA retained its 2013 mortality assumptions for purposes of measuring its pension and other post-retirement benefit obligations at September 30, 2014. The actuarial experience study was further updated in 2015. Based on analysis of the 2015 study, the 2014 SOA study of mortality tables, and recent additional studies of mortality improvement that was updated by the SOA in October 2015 (MP-2015), TVA adopted an adjusted version of the SOA's new RP-2014 mortality tables and a modified MP-2014 improvement scale for purposes of measuring its pension and other post-retirement benefit obligations at September 30, 2015.

other post-retirement benefit obligations by \$518 million and \$21 million, respectively, as of September 30, 2015.



Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p>Health Care Cost Trends. TVA reviews actual recent cost trends and projected future trends in establishing health care cost trend rates. The assumed health care trend rates used to determine post-retirement benefit obligations for 2015 and 2014 were 7.00 percent and 7.50 percent, respectively. The 2015 health care cost trend rate of 7.00 percent used to determine post-retirement benefit obligations is assumed to gradually decrease each successive year until it reaches a 5.00 percent annual increase in health care costs in the years beginning October 1, 2019, and beyond. The assumed health care cost trend rates used to determine the net periodic post-retirement cost were 7.50 percent for 2015, 8.00 percent for 2014, and 8.5 percent for 2013. TVA plans to use 7.00 percent in the determination of 2016 net periodic post-retirement cost. The current trend rate assumption reflects the review of TVA medical claims, slight expected increases in premiums for 2016, and more participants moving to the high deductible plan.</p>	<p>Periodic post-retirement benefit cost could fluctuate if there are changes in the health care cost trend rate. Assuming that the other components of the calculation are held constant and excluding any impact for unamortized actuarial gains or losses, a one percent increase in the assumed health care cost trend rate would impact the post-retirement service and interest cost components by \$6 million and the accumulated post-retirement benefit obligation by \$88 million. Likewise, a one percent decrease in the health care cost trend rate would impact the post-retirement service and interest cost components by \$(6) million and the accumulated post-retirement benefit obligation by \$(94) million.</p>
	<p>Cost of Living Adjustment. Cost-of-living adjustments ("COLAs") are an increase in the benefits for eligible retirees to help maintain the purchasing power of benefits as consumer prices increase. Eligible retirees receive a COLA on the base pension portion of the monthly pension benefit in January following any year in which the 12-month average Consumer Price Index for All Urban Consumers ("CPI-U") exceeded by as much as one percent the 12-month average of the CPI-U for the preceding year. The minimum COLA</p>	<p>A higher COLA assumption increases the pension benefit obligation and correspondingly increases the net periodic pension benefit cost. A lower COLA assumption decreases the pension benefit obligation and the net periodic pension benefit cost. Assuming the other components of the calculation are held constant and excluding any impact for unamortized actuarial gains or losses, a 0.25 percent increase in the COLA assumption would increase the 2015 pension benefit obligation by \$268 million and increase the net periodic pension benefit cost by \$28 million.</p>

is one percent and the maximum is five percent. Prior to 2013, TVA had maintained a 2.5 percent COLA, but determined that a more accurate estimate would be to lower the COLA for the short-term with a gradual increase that would trend back up to the long-term expectations based upon the economic forecast and the Federal Reserve policy. As of 2015, the economy is recovering more slowly than anticipated, and the Federal Reserve has reaffirmed its intention to keep the target range for the federal funds rate at 0 to 0.25 percent. As a result, TVA determined it should decrease the COLA assumption in 2016 to zero percent with an increase to 2.20 percent in 2017, followed by gradual increases in successive years until it reaches the ultimate rate of 2.40 percent in 2021.

Contributions. The minimum contribution for 2015 was \$215 million; however, TVA made a \$275 million contribution to TVARS. The 2014 minimum contribution was \$198 million; however, TVA contributed \$250 million to TVARS. In 2015, TVA made contributions of \$7 million to the SERP and \$44 million to the other post-retirement benefit plans. In 2014, TVA made contributions of \$6 million to the SERP and \$47 million to the other post-retirement benefit plans. TVA expects to contribute \$275 million to TVARS, \$6 million to the SERP, and \$39 million to the other post-retirement benefit plans in 2016.

## Fair Value Measurements

### Investments

Investments classified as trading consist of amounts held in the Nuclear Decommissioning Trust ("NDT"), Asset Retirement Trust ("ART"), SERP, and Long-Term Deferred Compensation Plan ("LTDCP"). These assets are generally measured at fair value based on quoted market prices or other observable market data such as interest rate indices. These investments are primarily U.S. and international equities, real estate investment trusts, fixed income investments, high-yield fixed



## Table of Contents

income investments, U.S. Treasury Inflation-Protected Securities, commodities, currencies, derivative instruments, and other investments. TVA has classified all of these trading securities as either Level 1, Level 2, or Investments measured at net asset value. See Note 17 — Valuation Techniques for a discussion of valuation levels of the investments. See Note 21 — Fair Value Measurements for disclosure of fair value measurements for investments held by TVARS that support TVA's qualified defined benefit pension plan.

Prices provided by third-parties for the investments are subjected to automated tolerance checks by the investment portfolio trustee to identify and avoid, where possible, the use of inaccurate prices. Any such prices identified as outside the tolerance thresholds are reported to the vendor which provided the price. If the prices are validated, the primary pricing source is used. If not, a secondary source price which has passed the applicable tolerance check is used (or queried with the vendor if it is out of tolerance), resulting in either the use of a secondary price, where validated, or the last reported default price, as in the case of a missing price. For monthly valued accounts, where secondary price sources are available, an automated inter-source tolerance report identifies prices with an inter-vendor pricing variance of over two percent at an asset class level. For daily valued accounts, each security is assigned, where possible, an indicative major market index, against which daily price movements are automatically compared. Tolerance thresholds are established by asset class. Prices found to be outside of the applicable tolerance threshold are reported and queried with vendors as described above.

In addition to the tolerance checks performed by the investment portfolio trustee, TVA performs its own analytical testing on the change in fair value measurements each period to ensure the valuations are reasonable based on changes in general market assumptions. TVA also performs pricing tests on various portfolios comprised of securities classified in Levels 1 and 2 on a quarterly basis to confirm accuracy of the values received from the investment portfolio trustee.

## Derivatives

TVA has entered into various derivative transactions, including commodity option contracts, forward contracts, swaps, swaptions, futures, and options on futures, to manage various market risks. Other than certain derivative instruments included in investment funds, it is TVA's policy to enter into these derivative transactions solely for hedging purposes and not for speculative purposes.

**Currency and Interest Rate Derivatives.** TVA has three currency swaps and four "fixed for floating" interest rate swaps. The currency swaps protect against changes in cash flows caused by volatility in exchange rates related to outstanding Bonds denominated in British pounds sterling. The currency and interest rate swaps are classified as Level 2 valuations as the rate curves and interest rates affecting the fair value of the contracts are based on observable data. The application of credit valuation adjustments ("CVAs") did not materially affect the fair value of these assets and liabilities at September 30, 2015.

**Commodity Contracts.** TVA enters into commodity derivatives for coal and natural gas that require physical delivery of the contracted quantity of the commodity. The fair values of these derivative contracts are determined using internal models based on income approaches. TVA develops an overall coal forecast based on widely-used short-term and mid-range market data from an external pricing specialist in addition to long-term internal estimates. To value the volume option component of applicable coal contracts, TVA uses a Black-Scholes pricing model which includes inputs from the overall coal price forecast, contract-specific terms, and other market inputs. Based on the use of certain significant unobservable inputs, these valuations are classified as Level 3 valuations. Additionally, any settlement fees related to early termination of coal supply contracts are included at the contractual amount. The application of CVAs did not materially affect the fair value of these assets and liabilities at September 30, 2015.

Commodity Derivatives under the Financial Trading Program. TVA established a Financial Trading Program ("FTP") under which it could purchase and sell futures, swaps, options, and similar derivative instruments to hedge its exposure to changes in prices of natural gas, fuel oil, coal, and other commodities. Although certain natural gas futures and swaps under the FTP remain at September 30, 2015, future purchases under the program have been suspended. Management is currently evaluating the future use of financial instruments for price hedging. TVA is prohibited from taking speculative positions in its FTP.

Financial instruments under the FTP are valued based on market approaches which utilize Chicago Mercantile Exchange ("CME") quoted prices and other observable inputs. Futures and options contracts settled on the CME are classified as Level 1 valuations. Swap contracts are valued using a pricing model based on CME inputs and are subject to nonperformance risk outside of the exit price. These contracts are classified as Level 2 valuations. The application of CVAs did not materially affect the fair value of these assets and liabilities at September 30, 2015.

TVA maintains policies and procedures to value commodity contracts using what is believed to be the best and most relevant data available. In addition, TVA's risk management group reviews valuations and pricing data. TVA retains independent pricing vendors to assist in valuing certain instruments without market liquidity. TVA plans to continue to manage fuel price volatility through various methods, but is currently evaluating the future use of financial instruments.

## Table of Contents

### Fair Value Considerations

In determining the fair value of its financial instruments, TVA considers the source of observable market data inputs, liquidity of the instrument, credit risk, and risk of nonperformance of itself or the counterparty to the contract. The conditions and criteria used to assess these factors are described below.

**Sources of Market Assumptions.** TVA derives its financial instrument market assumptions from market data sources (e.g., CME, Moody's Investors Service, Inc. ("Moody's")). In some cases, where market data is not readily available, TVA uses comparable market sources and empirical evidence to derive market assumptions and determine a financial instrument's fair value.

**Market Liquidity.** Market liquidity is assessed by TVA based on criteria as to whether the financial instrument trades in an active or inactive market. A financial instrument is considered to be in an active market if the prices are fully transparent to the market participants, the prices can be measured by market bid and ask quotes, the market has a relatively high trading volume, and the market has a significant number of market participants that will allow the market to rapidly absorb the quantity of the assets traded without significantly affecting the market price. Other factors TVA considers when determining whether a market is active or inactive include the presence of government or regulatory control over pricing that could make it difficult to establish a market-based price upon entering into a transaction.

**Nonperformance Risk.** In determining the potential impact of nonperformance risk, which includes credit risk, TVA considers changes in current market conditions, readily available information on nonperformance risk, letters of credit, collateral, other arrangements available, and the nature of master netting arrangements. TVA is a counterparty to derivative instruments that subject TVA to nonperformance risk. Nonperformance risk on the majority of investments and certain exchange-traded instruments held by TVA is incorporated into the exit price that is derived from quoted market data that is used to value the investment.

Nonperformance risk for most of TVA's derivative instruments is an adjustment to the initial asset/liability fair value. TVA adjusts for nonperformance risk, both of TVA (for liabilities) and the counterparty (for assets), by applying a CVA. TVA determines an appropriate CVA for each applicable financial instrument based on the term of the instrument and TVA's or the counterparty's credit rating as obtained from Moody's. For companies that do not have an observable credit rating, TVA uses internal analysis to assign a comparable rating to the company. TVA discounts each financial instrument using the historical default rate (as reported by Moody's for CY 1983 to CY 2014) for companies with a similar credit rating over a time period consistent with the remaining term of the contract.

All derivative instruments are analyzed individually and are subject to unique risk exposures. At September 30, 2015, the aggregate counterparty credit risk adjustments applied to both TVA's derivative asset and liability positions were decreases of \$1 million.

**Collateral.** TVA's interest rate swaps, currency swaps, and commodity derivatives under the FTP contain contract provisions that require a party to post collateral (in a form such as cash or a letter of credit) when the party's liability balance under the agreement exceeds a certain threshold. See Note 16 — Other Derivative Instruments — Collateral for a discussion of collateral related to TVA's derivative liabilities.

### New Accounting Standards and Interpretations

See Note 2 for a discussion of recent accounting standards and pronouncements which were issued by the FASB, became effective for TVA, or were adopted by TVA during the presented periods.

Legislative and Regulatory Matters

TVA continues to monitor how regulatory agencies are interpreting and implementing the provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which was enacted in July 2010. As a result of this act and its implementing regulations, TVA has become subject to recordkeeping, reporting, and reconciliation requirements related to its derivative transactions. In addition, depending on how regulatory agencies interpret and implement the provisions of this act, TVA's hedging costs may increase, and TVA may have to post additional collateral and margin in connection with its derivative transactions.

For a discussion of environmental legislation and regulation, see Item 1, Business — Environmental Matters.

TVA does not engage, and does not control any entity that is engaged, in any activity listed under Section 13(r) of the Exchange Act, which requires certain issuers to disclose certain activities relating to Iran involving the issuer and its affiliates. Based on information supplied by each such person, none of TVA's directors and executive officers are involved in any such activities. While TVA is an agency and instrumentality of the United States of America, TVA does not believe its disclosure obligations, if any, under Section 13(r), extend to the activities of any other departments, divisions, or agencies of the United States.

## Table of Contents

### Environmental Matters

See Item 1, Business — Environmental Matters, which discussion is incorporated by reference into this Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

### Legal Proceedings

From time to time, TVA is party to or otherwise involved in lawsuits, claims, proceedings, investigations, and other legal matters ("Legal Proceedings") that have arisen in the ordinary course of conducting its activities, as a result of catastrophic events or otherwise. TVA had accrued approximately \$115 million with respect to Legal Proceedings at September 30, 2015. No assurance can be given that TVA will not be subject to significant additional claims and liabilities. If actual liabilities significantly exceed the estimates made, TVA's results of operations, liquidity, and financial condition could be materially adversely affected.

For a discussion of certain current material Legal Proceedings, see Note 22 — Legal Proceedings, which discussion is incorporated into this Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

### Risk Management Activities

TVA is exposed to various market risks. These market risks include risks related to commodity prices, investment prices, interest rates, currency exchange rates, inflation, and counterparty credit and performance risk. To help manage certain of these risks, TVA has entered into various derivative transactions, including commodity option contracts, forward contracts, swaps, swaptions, futures, and options on futures. Other than certain derivative instruments in its trust investment funds, it is TVA's policy to enter into these derivative transactions solely for hedging purposes and not for speculative purposes. TVA plans to continue to manage fuel price volatility through various methods, but is currently evaluating the future use of financial instruments. See Note 16.

### Risk Governance

The Enterprise Risk Council ("ERC") was created in 2005 to strengthen and formalize TVA's enterprise-wide risk management efforts. The ERC is responsible for the highest level of risk oversight at TVA and is also responsible for communicating enterprise-wide risks with policy implications to the TVA Board or a designated TVA Board committee. The ERC's current members are the President and Chief Executive Officer (chair); Executive Vice President and Chief Operating Officer; Executive Vice President and Chief External Relations Officer; Executive Vice President and Chief Financial Officer; Executive Vice President and General Counsel; Senior Vice President of Human Resources and Communications; Senior Vice President of Shared Services; and Senior Vice President and Chief Risk Officer. The ERC has at times designated a representative from Office of the Inspector General to act as an advisory member.

The ERC has established a subordinate Risk Management Steering Committee ("RMSC") and a Portfolio Risk Oversight Committee ("PROC"), both of which are comprised of business unit leaders with specific expertise. The RMSC is responsible for (1) driving accountability on the mitigation of key enterprise risks, (2) promoting cross business risk collaboration and management, and (3) actively identifying emerging risks. PROC is responsible for the evaluation of TVA's portfolio risk management processes and infrastructure for power, fuel, and other commodities critical to TVA's power supply.

TVA has a designated Enterprise Risk Management ("ERM") organization within its Financial Services organization responsible for (1) establishing enterprise risk management policies and guidelines, (2) developing an enterprise risk



profile aligned with the strategic objectives, (3) performing annual risk assessments across all TVA business units, (4) monitoring and reporting on identified enterprise risks and emerging risks, (5) facilitating enterprise risk discussions with the risk subject matter experts across the organization and at the RMSC, ERC, and TVA Board levels, and (6) developing and improving TVA's risk awareness culture. TVA has cataloged major short-term and long-term enterprise level risks across the organization. A discussion of significant risks is presented in Item 1A, Risk Factors.

#### Commodity Price Risk

TVA is exposed to effects of market fluctuations in the price of commodities that are critical to its operations, including electricity, coal, and natural gas. The magnitude of exposure to these risks is influenced by many factors including contract terms and market liquidity. TVA's commodity price risk is substantially mitigated by its cost-based rates, including its total fuel cost adjustment, and long-term fixed price commodity contracts.

TVA previously used its FTP to help manage cost volatility for its wholesale and directly served customers. Although management has suspended future use of financial instruments under the program, certain natural gas hedges remained in place at September 30, 2015, for the mitigation of risks associated with the price of natural gas. A hypothetical 10 percent decline in the market price of natural gas on September 30, 2015, and 2014, would have resulted in decreases of approximately \$14 million and \$41 million, respectively, in the fair value of TVA's natural gas trading derivative instruments at these dates.

Table of Contents

Additionally, TVA manages risk with commodity contract derivatives for both coal and natural gas that require physical delivery of the contracted quantity. A hypothetical 10 percent decline in the market price of coal on September 30, 2015, and 2014, would have resulted in decreases of approximately \$61 million and \$109 million, respectively, in the fair value of TVA's coal derivative instruments at these dates. A hypothetical 10 percent decline in the market price of natural gas on September 30, 2015, and 2014, would have resulted in decreases of approximately \$40 million and \$26 million, respectively, in the fair value of TVA's natural gas derivative instruments at these dates.

Investment Price Risk

TVA's investment price risk relates primarily to investments in TVA's NDT, ART, pension fund, SERP, and Long-Term Deferred Compensation Plan ("LTDCP").

**Nuclear Decommissioning Trust.** The NDT is generally designed to achieve a return in line with overall equity market performance. The assets of the trust are invested in debt and equity securities, private partnerships and limited liability companies, and certain derivative instruments including forwards, futures, options, and swaps, and through these investments the trust has exposure to U.S. equities, international equities, real estate investment trusts, high-yield debt, domestic debt, U.S. Treasury Inflation-Protected Securities ("TIPS"), commodities, and private real estate, private equity, and absolute return strategies. At September 30, 2015, and 2014, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$148 million.

**Asset Retirement Trust.** The ART is presently invested to achieve a return in line with equity and debt market performance. The assets of the trust are invested in securities directly and indirectly through commingled funds. At September 30, 2015, and 2014, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$43 million and \$40 million, respectively.

**Qualified Pension Plan.** TVARS has a long-term investment plan which contains a dynamic de-risking strategy that allocates investments to assets that better match the liability, such as long duration fixed income securities, over time as funding status targets are met. The current investment asset allocation policy approved by the TVARS Board has targets of 47 percent equity including U.S., non-U.S., private, and low volatility global public equity investments, 28 percent fixed income securities, 15 percent public real assets including TIPS, commodities, and Master Limited Partnerships ("MLPs"), and 10 percent private real assets. The qualified pension plan assets are invested across global public equity, private equity, cash, core fixed income, long-term core fixed income, investment grade credit, high yield fixed income, emerging markets fixed income, global TIPS, commodities, MLPs, and private real assets. The TVARS asset allocation policy includes permissible deviations from these target allocations. The TVARS Board can take action, as appropriate, to rebalance the system's assets consistent with the asset allocation policy. At September 30, 2015, and 2014, an immediate 10 percent decrease in the value of the net assets of the fund would have reduced the value of the fund by approximately \$680 million and \$751 million, respectively.

**Supplemental Executive Retirement Plan.** The SERP is a non-qualified defined benefit pension plan similar to those typically found in other companies in TVA's peer group and is provided to a limited number of executives. TVA's SERP was created to recruit and retain key executives. The plan is designed to provide a competitive level of retirement benefits in excess of the limitations on contributions and benefits imposed by TVA's qualified defined benefit plan and Internal Revenue Code Section 415 limits on qualified retirement plans. The SERP currently targets an asset allocation policy for its plan assets of 65 percent equity securities, which includes U.S. and non-U.S. equities, and 35 percent fixed income securities. The SERP plan assets are presently invested to achieve a return in line with overall equity market performance. At September 30, 2015, and 2014, an immediate 10 percent decrease in the value of the SERP investments would have reduced the value by \$5 million.

Long-Term Deferred Compensation Plan. The LTDCP is designed to provide long-term incentives to executives to encourage them to stay with TVA and to provide competitive levels of total compensation to such executives. The plan assists in the recruitment of top executive talent for TVA. As in other corporations, deferred compensation can be an integral part of a total compensation package. Assets include long-term deferred compensation and any other deferred balances. The default return on investment of the accounts is interest calculated based on the composite rate of all marketable U.S. Treasury issues. Executives may alternatively choose to have their balances adjusted based on the return of certain mutual funds. At September 30, 2015, and 2014, an immediate 10 percent decrease in the value of the deferred compensation accounts would have reduced the value by \$4 million and \$5 million, respectively.

#### Interest Rate Risk

TVA's interest rate risk is related primarily to its short-term investments, short-term debt, long-term debt, and interest rate derivatives.

Investments. At September 30, 2015, TVA had \$300 million of cash and cash equivalents, and the average balance of cash and cash equivalents for 2015 was \$600 million. The average interest rate that TVA received on its short-term investments during 2015 was less than one percent. If the rates of interest that TVA received on its short-term investments during 2015 were zero percent, TVA would have received less than \$1 million less in interest from its short-term investments during 2015. At

## Table of Contents

September 30, 2014, TVA had \$500 million of cash and cash equivalents, and the average balance of cash and cash equivalents for 2014 was \$755 million. The average interest rate that TVA received on its short-term investments during 2014 was less than one percent. If the rates that TVA received on its short-term investments during 2014 were zero percent, TVA would have received less than \$1 million less in interest on short-term investments during 2014. In addition to affecting the amount of interest that TVA receives from its short-term investments, changes in interest rates could affect the value of the investments in its pension plan, ART, NDT, and SERP. See Risk Management Activities — Investment Price Risk above.

**Short-Term Debt.** At September 30, 2015, TVA's short-term borrowings were \$1.0 billion, and the current maturities of long-term debt were \$65 million. Based on TVA's interest rate exposure at September 30, 2015, an immediate one percentage point increase in interest rates would have resulted in an increase of \$11 million in TVA's short-term interest expense. At September 30, 2014, TVA's short-term borrowings were \$596 million, and the current maturities of long-term debt were \$1.1 billion. Based on TVA's interest rate exposure at September 30, 2014, an immediate one percentage point increase in interest rates would have resulted in an increase of \$17 million in TVA's short-term interest expense.

**Long-Term Debt.** At September 30, 2015, and 2014, the interest rates on all of TVA's outstanding long-term debt were fixed (or subject only to downward adjustment under certain conditions). Accordingly, an immediate one percentage point increase in interest rates would not have affected TVA's interest expense associated with its long-term debt. When TVA's long-term debt matures or is redeemed, however, TVA typically refinances this debt by issuing additional long-term debt. Accordingly, if interest rates are high when TVA issues this additional long-term debt, TVA's cash flows, results of operations, and financial condition may be adversely affected. This risk is somewhat mitigated by the fact that TVA's debt portfolio is diversified in terms of maturities and has a long average life. At September 30, 2015, and 2014, the average life of TVA's debt portfolio was 17.8 years and 16.6 years, respectively. A schedule of TVA's debt maturities is contained in Note 14 — Debt Outstanding.

**Interest Rate Derivatives.** Changes in interest rates also affect the mark-to-market valuation of TVA's interest rate derivatives. TVA had four interest rate swaps outstanding at September 30, 2015 and September 30, 2014. Net unrealized gains and losses on these instruments are reflected on TVA's consolidated balance sheets in a regulatory asset account, and realized gains and losses are reflected in earnings. Based on TVA's interest rate exposure at September 30, 2015, an immediate one-half percentage point decrease in interest rates would have increased the interest rate swap liabilities by \$266 million. Based on TVA's interest rate exposure at September 30, 2014, an immediate one-half percentage point decrease in interest rates would have increased the interest rate swap liabilities by \$237 million.

### Currency Exchange Rate Risk

At September 30, 2015, and 2014, TVA had three issues of Bonds outstanding whose principal and interest payments were denominated in British pounds sterling. TVA issued these Bonds in amounts of £200 million, £250 million, and £150 million in 1999, 2001, and 2003, respectively. When TVA issued these Bonds, it hedged its currency exchange rate risk by entering into currency swap agreements. Accordingly, at September 30, 2015, and 2014, a 10 percent change in the British pound sterling-U.S. dollar exchange rate would not have had a material impact on TVA's cash flows, results of operations, or financial position as these instruments are completely hedged.

### Counterparty Credit Risk

Counterparty credit risk is the exposure to economic loss that would occur as a result of a counterparty's nonperformance of its contractual obligations. Where exposed to counterparty credit risk, TVA analyzes the counterparty's financial condition prior to entering into an agreement, establishes credit limits, monitors the

appropriateness of those limits, as well as any changes in the creditworthiness of the counterparty, on an ongoing basis, and employs credit mitigation measures, such as collateral or prepayment arrangements and master purchase and sale agreements, to mitigate credit risk.

Credit of Customers. The majority of TVA's counterparty credit risk is limited to trade accounts receivable from delivered power sales to LPCs, all located in the Tennessee Valley region. To a lesser extent, TVA is exposed to credit risk from industries and federal agencies directly served and from exchange power arrangements with a small number of investor-owned regional utilities related to either delivered power or the replacement of open positions of longer-term purchased power or fuel agreements.

TVA had concentrations of accounts receivable from three customers that represented 27 percent of total accounts receivable at September 30, 2015 and 2014, respectively.

Table of Contents

The table below summarizes TVA's customer credit risk from trade accounts receivable at September 30, 2015 and 2014:

## Customer Credit Risk

At September 30

	2015	2014
Trade accounts receivable <sup>(1)</sup>		
Investment grade		
Local power companies	\$770	\$798
Exchange power arrangements	2	1
Industries and federal agencies directly served	41	49
Internally rated - investment grade		
Local power companies	677	704
Exchange power arrangements	—	1
Industries and federal agencies directly served	5	9
Non-investment grade		
Industries and federal agencies directly served	7	4
Internally rated - non-investment grade		
Exchange power arrangements	3	3
Industries and federal agencies directly served	4	7
Total trade accounts receivable	1,509	1,576
Other accounts receivable		
Miscellaneous accounts	92	101
Provision for uncollectible accounts	(1	) (1
Total other accounts receivable	91	100
Accounts receivable, net	\$1,600	\$1,676

Note

(1) Includes unbilled power receivables of \$17 million and \$19 million at September 30, 2015 and September 30, 2014, respectively.

**Counterparty Performance Risk.** In addition to being exposed to economic loss due to the nonperformance of TVA's customers, TVA is exposed to economic loss because of the nonperformance of its other counterparties, including suppliers and counterparties to its derivative contracts. Where exposed to performance risk, TVA analyzes the counterparty's financial condition prior to entering into an agreement and employs performance assurance measures, such as parent guarantees, letters of credit, cash deposits, or performance bonds, to mitigate the risk.

TVA has various agreements under which it has exposure to various financial institutions with which it does business. Most of these are not material on a net exposure basis. TVA believes its policies and procedures for counterparty performance risk reviews have generally protected TVA against significant exposure to financial institutions impacted by recent market and economic conditions.

**Credit of Suppliers.** If one of TVA's fuel or purchased power suppliers fails to perform under the terms of its contract with TVA, TVA might lose the money that it paid to the supplier under the contract and have to purchase replacement fuel or power on the spot market, perhaps at a significantly higher price than TVA was entitled to pay under the contract. In addition, TVA might not be able to acquire replacement fuel or power in a timely manner and thus might be unable to satisfy its own obligations to deliver power. TVA has a power purchase agreement with a supplier that expires on March 31, 2032. TVA has determined that the supplier has the equivalent of a non-investment grade credit rating. As a result of the supplier's credit ratings, the company has provided credit assurance to TVA under the terms of its agreement.

Credit of Derivative Counterparties. TVA has entered into derivative contracts for hedging purposes, and TVA's NDT and qualified pension plan have entered into derivative contracts for investment purposes. If a counterparty to one of TVA's hedging transactions defaults, TVA might incur substantial costs in connection with entering into a replacement hedging transaction. If a counterparty to the derivative contracts into which the NDT and the qualified pension plan have entered for investment purposes defaults, the value of the investment could decline significantly, or perhaps become worthless.

Table of Contents

Credit of TVA

A downgrade in TVA's credit rating could have material adverse effects on TVA's cash flows, results of operations, and financial condition and could harm investors in TVA securities. Among other things, a downgrade could have the following effects:

A downgrade could increase TVA's interest expense by increasing the interest rates that TVA pays on new Bonds that it issues. An increase in TVA's interest expense may reduce the amount of cash available for other purposes, which may result in the need to increase borrowings, to reduce other expenses or capital investments, or to increase power rates.

A downgrade could result in TVA's having to post additional collateral under certain physical and financial contracts that contain rating triggers.

A downgrade below a contractual threshold could prevent TVA from borrowing under three credit facilities totaling \$2.5 billion.

A downgrade could lower the price of TVA securities in the secondary market, thereby hurting investors who sell TVA securities after the downgrade and diminishing the attractiveness and marketability of TVA Bonds.

For a discussion of risk factors related to TVA's credit rating, see Item 1A, Risk Factors.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Quantitative and qualitative disclosures about market risk are reported in Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Risk Management Activities, which discussion is incorporated into this Item 7A, Quantitative and Qualitative Disclosures About Market Risk.



Table of Contents

## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

TENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended September 30

(in millions)

	2015	2014	2013
Operating revenues			
Revenue from sales of electricity	\$10,847	\$10,999	\$10,829
Other revenue	156	138	127
Total operating revenues	11,003	11,137	10,956
Operating expenses			
Fuel	2,444	2,730	2,820
Purchased power	950	1,094	1,027
Operating and maintenance	2,838	3,341	3,428
Depreciation and amortization	2,031	1,843	1,680
Tax equivalents	525	540	548
Total operating expenses	8,788	9,548	9,503
Operating income	2,215	1,589	1,453
Other income (expense), net	29	49	44
Interest expense			
Interest expense	1,347	1,344	1,394
Allowance for funds used during construction	(214	) (175	) (168
Net interest expense	1,133	1,169	1,226
Net income (loss)	\$1,111	\$469	\$271

The accompanying notes are an integral part of these consolidated financial statements.

TENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

For the years ended September 30

(in millions)

	2015	2014	2013
Net income (loss)	\$1,111	\$469	\$271
Other comprehensive income (loss)			
Net unrealized gain (loss) on cash flow hedges	(72	) 4	78
Reclassification to earnings from cash flow hedges	65	(2	) (1
Total other comprehensive income (loss)	\$(7	) \$2	\$77
Total comprehensive income (loss)	\$1,104	\$471	\$348

The accompanying notes are an integral part of these consolidated financial statements.

Table of ContentsTENNESSEE VALLEY AUTHORITY  
CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## ASSETS

	2015	2014
Current assets		
Cash and cash equivalents	\$ 300	\$ 500
Restricted cash and investments	15	19
Accounts receivable, net	1,600	1,676
Inventories, net	1,031	1,056
Regulatory assets	506	481
Other current assets	54	56
Total current assets	3,506	3,788
Property, plant, and equipment		
Completed plant	50,069	47,564
Less accumulated depreciation	(26,318	) (24,589
Net completed plant	23,751	22,975
Construction in progress	7,147	5,951
Nuclear fuel	1,415	1,322
Capital leases	94	102
Total property, plant, and equipment, net	32,407	30,350
Investment funds	2,011	1,981
Regulatory and other long-term assets		
Regulatory assets	10,418	8,994
Other long-term assets	483	483
Total regulatory and other long-term assets	10,901	9,477
Total assets	\$ 48,825	\$ 45,596

The accompanying notes are an integral part of these consolidated financial statements.

Table of ContentsTENNESSEE VALLEY AUTHORITY  
CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## LIABILITIES AND PROPRIETARY CAPITAL

	2015	2014
Current liabilities		
Accounts payable and accrued liabilities	\$2,127	\$2,050
Accrued interest	366	380
Current portion of leaseback obligations	79	75
Current portion of energy prepayment obligations	100	100
Regulatory liabilities	164	184
Short-term debt, net	1,034	596
Current maturities of power bonds	32	1,032
Current maturities of long-term debt of variable interest entities	33	32
Total current liabilities	3,935	4,449
Other liabilities		
Post-retirement and post-employment benefit obligations	7,107	5,839
Asset retirement obligations	3,682	3,089
Other long-term liabilities	2,219	1,962
Leaseback obligations	537	616
Energy prepayment obligations	210	310
Regulatory liabilities	2	—
Total other liabilities	13,757	11,816
Long-term debt, net		
Long-term power bonds, net	22,684	21,948
Long-term debt of variable interest entities	1,246	1,279
Total long-term debt, net	23,930	23,227
Total liabilities	41,622	39,492
Commitments and contingencies (Note 22)		
Proprietary capital		
Power program appropriation investment	258	258
Power program retained earnings	6,357	5,240
Total power program proprietary capital	6,615	5,498
Nonpower programs appropriation investment, net	590	601
Accumulated other comprehensive income (loss)	(2	) 5
Total proprietary capital	7,203	6,104
Total liabilities and proprietary capital	\$48,825	\$45,596

The accompanying notes are an integral part of these consolidated financial statements.



Table of ContentsTENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF CASH FLOWSFor the years ended September 30  
(in millions)

	2015	2014	2013
Cash flows from operating activities			
Net income (loss)	\$1,111	\$469	\$271
Adjustments to reconcile net income (loss) to net cash provided by operating activities			
Depreciation and amortization (including amortization of debt issuance costs and premiums/discounts)	2,077	1,888	1,723
Amortization of nuclear fuel cost	277	279	268
Non-cash retirement benefit expense	332	572	622
Prepayment credits applied to revenue	(100)	) (100)	) (102)
Fuel cost adjustment deferral	(6)	) (38)	) 97
Fuel cost tax equivalents	(18)	) 6	2
Changes in current assets and liabilities			
Accounts receivable, net	93	(79)	) 114
Inventories and other current assets, net	(12)	) 34	27
Accounts payable and accrued liabilities	(121)	) 147	(296)
Accrued interest	(13)	) 2	1
Regulatory assets costs	(23)	) (56)	) (21)
Pension contributions	(282)	) (256)	) (6)
Insurance recoveries	63	175	47
Other, net	(63)	) (63)	) (150)
Net cash provided by operating activities	3,315	2,980	2,597
Cash flows from investing activities			
Construction expenditures	(2,850)	) (2,384)	) (2,051)
Combustion turbine asset acquisition	(342)	) —	—
Nuclear fuel expenditures	(350)	) (326)	) (287)
Purchases of investments, net	(52)	) (48)	) (48)
Loans and other receivables			
Advances	(17)	) (6)	) (6)
Repayments	8	6	9
Other, net	18	2	(2)
Net cash used in investing activities	(3,585)	) (2,756)	) (2,385)
Cash flows from financing activities			
Long-term debt			
Issues of power bonds	973	989	2,122
Issues of variable interest entities	—	—	360
Redemptions and repurchases of power bonds	(1,180)	) (365)	) (2,358)
Payments on debt of variable interest entities	(32)	) (30)	) (13)
Short-term debt issues (redemptions), net	437	(1,837)	) 924
Payments on leases and leasebacks	(80)	) (73)	) (446)
Financing costs, net	(7)	) (4)	) (20)
Payments to U.S. Treasury	(5)	) (14)	) (27)
Other, net	(36)	) 8	(20)
Net cash (used in) provided by financing activities	70	(1,326)	) 522
Net change in cash and cash equivalents	(200)	) (1,102)	) 734

Edgar Filing: Tennessee Valley Authority - Form 10-K

Cash and cash equivalents at beginning of year	500	1,602	868
Cash and cash equivalents at end of year	\$ 300	\$ 500	\$ 1,602

The accompanying notes are an integral part of these consolidated financial statements.

84

---

Table of Contents

TENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF CHANGES IN PROPRIETARY CAPITAL  
For the years ended September 30  
(in millions)

	Power Program Appropriation Investment	Power Program Retained Earnings	Nonpower Programs Appropriation Investment, Net	Accumulated Other Comprehensive Income (Loss)from Net Gains (Losses) on Cash Flow Hedges	Total	
Balance at September 30, 2012	\$288	\$4,492	\$620	\$(74	) \$5,326	
Net income (loss)	—	282	(11	) —	271	
Total other comprehensive income (loss)	—	—	—	77	77	
Return on power program appropriation investment	—	(7	) —	—	(7	)
Return of power program appropriation investment	(20	) —	—	—	(20	)
Balance at September 30, 2013	\$268	\$4,767	\$609	\$3	\$5,647	
Net income (loss)	—	477	(8	) —	469	
Total other comprehensive income (loss)	—	—	—	2	2	
Return on power program appropriation investment	—	(4	) —	—	(4	)
Return of power program appropriation investment	(10	) —	—	—	(10	)
Balance at September 30, 2014	\$258	\$5,240	\$601	\$5	\$6,104	
Net income (loss)	—	1,122	(11	) —	1,111	
Total other comprehensive income (loss)	—	—	—	(7	) (7	)
Return on power program appropriation investment	—	(5	) —	—	(5	)
Balance at September 30, 2015	\$258	\$6,357	\$590	\$(2	) \$7,203	

The accompanying notes are an integral part of these consolidated financial statements.

Table of Contents

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Dollars in millions except where noted)

Note		Page No.
<u>1</u>	<u>Summary of Significant Accounting Policies</u>	<u>86</u>
<u>2</u>	<u>Impact of New Accounting Standards and Interpretations</u>	<u>92</u>
<u>3</u>	Restructuring	<u>93</u>
<u>4</u>	<u>Accounts Receivable, Net</u>	<u>93</u>
<u>5</u>	Inventories, net	<u>93</u>
<u>6</u>	Acquisition	<u>93</u>
<u>7</u>	Net Completed Plant	<u>94</u>
<u>8</u>	<u>Other Long-Term Assets</u>	<u>94</u>
<u>9</u>	<u>Regulatory Assets and Liabilities</u>	<u>95</u>
<u>10</u>	Variable Interest Entities	<u>97</u>
<u>11</u>	<u>Kingston Fossil Plant Ash Spill</u>	<u>99</u>
<u>12</u>	<u>Other Long-Term Liabilities</u>	<u>100</u>
<u>13</u>	<u>Asset Retirement Obligations</u>	<u>100</u>
<u>14</u>	<u>Debt and Other Obligations</u>	<u>101</u>
<u>15</u>	Accumulated Other Comprehensive Income (Loss)	<u>107</u>
<u>16</u>	<u>Risk Management Activities and Derivative Transactions</u>	<u>107</u>
<u>17</u>	<u>Fair Value Measurements</u>	<u>114</u>
<u>18</u>	Proprietary Capital	<u>121</u>
<u>19</u>	<u>Other Income (Expense), Net</u>	<u>122</u>
<u>20</u>	Supplemental Cash Flow Information	<u>122</u>
<u>21</u>	<u>Benefit Plans</u>	<u>122</u>
<u>22</u>	Commitments and Contingencies	<u>136</u>
<u>23</u>	Related Parties	<u>142</u>
<u>24</u>	Unaudited Quarterly Financial Information	<u>142</u>

## 1. Summary of Significant Accounting Policies

## General

The Tennessee Valley Authority ("TVA") is a corporate agency and instrumentality of the United States that was created in 1933 by legislation enacted by the United States ("U.S.") Congress in response to a request by President Franklin D. Roosevelt. TVA was created to, among other things, improve navigation on the Tennessee River, reduce the damage from destructive flood waters within the Tennessee River system and downstream on the lower Ohio and Mississippi Rivers, further the economic development of TVA's service area in the southeastern United States, and sell the electricity generated at the facilities TVA operates.

Today, TVA operates the nation's largest public power system and supplies power in most of Tennessee, northern Alabama, northeastern Mississippi, and southwestern Kentucky and in portions of northern Georgia, western North Carolina, and southwestern Virginia to a population of over nine million people.

TVA also manages the Tennessee River, its tributaries, and certain shorelines to provide, among other things, year-round navigation, flood damage reduction, and affordable and reliable electricity. Consistent with these primary purposes, TVA also manages the river system and public lands to provide recreational opportunities, adequate water supply, improved water quality, cultural and natural resource protection, and economic development.



## Edgar Filing: Tennessee Valley Authority - Form 10-K

The power program has historically been separate and distinct from the stewardship programs. It is required to be self-supporting from power revenues and proceeds from power financings, such as proceeds from the issuance of bonds, notes, or other evidences of indebtedness ("Bonds"). Although TVA does not currently receive congressional appropriations, it is required to make annual payments to the United States Department of the Treasury ("U.S. Treasury") as a return on the government's appropriation investment in TVA's power facilities (the "Power Program Appropriation Investment"). In the 1998 Energy and Water Development Appropriations Act, Congress directed TVA to fund essential stewardship activities related to its management of the Tennessee River system and nonpower or stewardship properties with power revenues in the event that there were insufficient appropriations or other available funds to pay for such activities in any fiscal year. Congress has not

## Table of Contents

provided any appropriations to TVA to fund such activities since 1999. Consequently, during 2000, TVA began paying for essential stewardship activities primarily with power revenues, with the remainder funded with user fees and other forms of revenues derived in connection with those activities. The activities related to stewardship properties do not meet the criteria of an operating segment under accounting principles generally accepted in the United States of America ("GAAP"). Accordingly, these assets and properties are included as part of the power program, TVA's only operating segment.

Power rates are established by the TVA Board of Directors ("the TVA Board") as authorized by the Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (the "TVA Act"). The TVA Act requires TVA to charge rates for power that will produce gross revenues sufficient to provide funds for operation, maintenance, and administration of its power system; payments to states and counties in lieu of taxes ("tax equivalents"); debt service on outstanding indebtedness; payments to the U.S. Treasury in repayment of and as a return on the Power Program Appropriation Investment; and such additional margin as the TVA Board may consider desirable for investment in power system assets, retirement of outstanding Bonds in advance of maturity, additional reduction of the Power Program Appropriation Investment, and other purposes connected with TVA's power business. In setting TVA's rates, the TVA Board is charged by the TVA Act to have due regard for the primary objectives of the TVA Act, including the objective that power shall be sold at rates as low as are feasible. Rates set by the TVA Board are not subject to review or approval by any state or other federal regulatory body. TVA fulfilled its requirement to repay \$1.0 billion of the Power Program Appropriation Investment in 2014.

### Fiscal Year

TVA's fiscal year ends September 30. Years (2015, 2014, etc.) refer to TVA's fiscal years unless they are preceded by "CY," in which case the references are to calendar years.

### Cost-Based Regulation

Since the TVA Board is authorized by the TVA Act to set rates for power sold to its customers, TVA is self-regulated. Additionally, TVA's regulated rates are designed to recover its costs. Based on current projections, TVA believes that rates, set at levels that will recover TVA's costs, can be charged and collected. As a result of these factors, TVA records certain assets and liabilities that result from the regulated ratemaking process that would not be recorded under GAAP for non-regulated entities. Regulatory assets generally represent incurred costs that have been deferred because such costs are probable of future recovery in customer rates. Regulatory liabilities generally represent obligations to make refunds to customers for previous collections for costs that are not likely to be incurred or deferral of gains that will be credited to customers in future periods. TVA assesses whether the regulatory assets are probable of future recovery by considering factors such as applicable regulatory changes, potential legislation, and changes in technology. Based on these assessments, TVA believes the existing regulatory assets are probable of recovery. This determination reflects the current regulatory and political environment and is subject to change in the future. If future recovery of regulatory assets ceases to be probable, or any of the other factors described above cease to be applicable, TVA would no longer be considered to be a regulated entity and would be required to write off these costs. All regulatory asset write offs would be required to be recognized in earnings in the period in which future recovery ceases to be probable.

### Basis of Presentation

The accompanying consolidated financial statements, which have been prepared in accordance with GAAP, include the accounts of TVA and three variable interest entities ("VIEs") of which TVA is the primary beneficiary. See Note 10. Intercompany balances and transactions have been eliminated in consolidation.

#### Use of Estimates

The preparation of financial statements requires TVA to estimate the effects of various matters that are inherently uncertain as of the date of the consolidated financial statements. Although the consolidated financial statements are prepared in conformity with GAAP, TVA is required to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the amounts of revenues and expenses reported during the reporting period. Each of these estimates varies in regard to the level of judgment involved and its potential impact on TVA's financial results. Estimates are considered critical either when a different estimate could have reasonably been used, or where changes in the estimate are reasonably likely to occur from period to period, and such use or change would materially impact TVA's financial condition, results of operations, or cash flows.

#### Reclassifications

Certain historical amounts have been reclassified in the Consolidated Statements of Cash Flows to conform to the current year presentation. Amounts previously presented in Cash flows from operating activities as Environmental cleanup costs - Kingston ash spill - non cash of \$68 million and \$72 million and Environmental cleanup costs – Kingston ash spill of \$(109) million and \$(99) million for the years ended September 30, 2014 and 2013, respectively, are currently reported in Other, net.

## Table of Contents

### Cash and Cash Equivalents

Cash includes cash on hand and non-interest bearing cash and deposit accounts. All highly liquid investments with original maturities of three months or less are considered cash equivalents.

### Restricted Cash and Investments

Restricted cash and investments reflect amounts related to collateral posted with TVA by a swap counterparty.

### Allowance for Uncollectible Accounts

The allowance for uncollectible accounts reflects TVA's estimate of probable losses inherent in its accounts and loans receivable balances. TVA determines the allowance based on known accounts, historical experience, and other currently available information including events such as customer bankruptcy and/or a customer failing to fulfill payment arrangements after 90 days. It also reflects TVA's corporate credit department's assessment of the financial condition of customers and the credit quality of the receivables.

The allowance for uncollectible accounts was \$1 million at September 30, 2015, and 2014, for accounts receivable. Additionally, loans receivable of \$129 million and \$92 million at September 30, 2015, and 2014, respectively, are included in Accounts receivable, net and Other long-term assets, for the current and long-term portions, respectively, and reported net of allowances for uncollectible accounts of \$8 million and \$9 million at September 30, 2015, and 2014, respectively.

### Revenues

Revenues from power sales are recorded as electricity is delivered to customers. In addition to power sales invoiced and recorded during the month, TVA accrues estimated unbilled revenues for power sales provided to six customers whose billing date occurs prior to the end of the month. Exchange power sales are presented in the accompanying consolidated statements of operations as a component of Sales of electricity. Exchange power sales are sales of excess power after meeting TVA native load and directly served requirements. (Native load refers to the customers on whose behalf a company, by statute, franchise, regulatory requirement, or contract, has undertaken an obligation to serve.)

From time to time TVA transfers fiber optic capacity on TVA's network to telecommunications service carriers and local power company customers of TVA ("LPCs"). These transactions are structured as indefeasible rights of use ("IRUs"), which are the exclusive right to use a specified amount of fiber optic capacity for a specified term. TVA accounts for the consideration received on transfers of fiber optic capacity for cash and on all of the other elements deliverable under an IRU as revenue ratably over the term of the agreement. TVA does not recognize revenue on any contemporaneous exchanges of its fiber optic capacity for an IRU of fiber optic capacity of the counterparty to the exchange.

TVA engages in a wide array of arrangements in addition to power sales. TVA records revenue when it is realized or realizable and earned when all of the following criteria are met: persuasive evidence of an arrangement exists; delivery has occurred or services have been rendered; the price or fee is fixed or determinable; and collectability is reasonably assured. Revenues from activities related to TVA's overall mission are recorded as other operating revenue versus those that are not related to the overall mission, which are recorded in Other income (expense), net.

### Inventories

## Edgar Filing: Tennessee Valley Authority - Form 10-K

**Certain Fuel, Materials, and Supplies.** Materials and supplies inventories are valued using an average unit cost method. A new average cost is computed after each inventory purchase transaction, and inventory issuances are priced at the latest moving weighted average unit cost. Coal, fuel oil, and natural gas inventories are valued using an average cost method. A new weighted average cost is computed monthly, and monthly issues are priced accordingly.

**Allowance for Inventory Obsolescence.** TVA reviews material and supplies inventories by category and usage on a periodic basis. Each category is assigned a probability of becoming obsolete based on the type of material and historical usage data. Based on the estimated value of the inventory, TVA adjusts its allowance for inventory obsolescence.

**Emission Allowances.** TVA has emission allowances for sulfur dioxide ("SO<sub>2</sub>") and nitrogen oxides ("NO<sub>x</sub>") which are accounted for as inventory. The average cost of allowances used each month is charged to operating expense based on tons of SO<sub>2</sub> and NO<sub>x</sub> emitted during the respective compliance periods. Allowances granted to TVA by the Environmental Protection Agency ("EPA") are recorded at zero cost.

Table of Contents

## Property, Plant, and Equipment, and Depreciation

Property, Plant, and Equipment. Additions to plant are recorded at cost, which includes direct and indirect costs and may include an allowance for funds used during construction ("AFUDC"), if eligible. The cost of current repairs and minor replacements is charged to operating expense. Nuclear fuel inventories, which are included in Property, plant, and equipment, are valued using the average cost method for raw materials and the specific identification method for nuclear fuel in a reactor. Amortization of nuclear fuel in a reactor is calculated on a units-of-production basis and is included in fuel expense.

Depreciation. TVA accounts for depreciation of its properties using the composite depreciation convention of accounting. Accordingly, the original cost of property retired is charged to accumulated depreciation. Depreciation is generally computed on a straight-line basis over the estimated service lives of the various classes of assets. Depreciation expense for the years ended September 30, 2015, 2014, and 2013 was \$1.7 billion, \$1.6 billion, and \$1.4 billion, respectively. Depreciation expense expressed as a percentage of the average annual depreciable completed plant was 3.71 percent for 2015, 3.42 percent for 2014, and 3.12 percent for 2013. Average depreciation rates by asset class are as follows:

## Property, Plant, and Equipment Depreciation Rates

At September 30

(percent)

	2015	2014	2013
Asset Class			
Nuclear	2.81	2.90	2.86
Coal-fired	5.50	4.37	3.47
Hydroelectric	1.30	1.44	1.30
Gas and oil-fired	3.18	3.23	3.21
Transmission	2.78	2.76	2.76
Other	8.65	8.40	8.14

In April 2011, TVA entered into two substantively similar agreements, one with the EPA and the other with Alabama, Kentucky, North Carolina, Tennessee, and three environmental advocacy groups (collectively, the "Environmental Agreements"). See Note 22 — Legal Proceedings — Environmental Agreements. Under the Environmental Agreements, TVA committed, among other things, to retire, on a phased schedule, 18 coal-fired units.

Consistent with the Environmental Agreements, Units 1 and 2 at John Sevier Fossil Plant ("John Sevier") were retired on December 31, 2012, and Units 3 and 4 were idled on December 31, 2012 and subsequently retired on June 25, 2014. Units 3 and 5 at Widows Creek Fossil Plant ("Widows Creek") were retired on July 31, 2013, and Units 1, 2, 4, and 6 at Widows Creek were retired on July 31, 2014. On October 1, 2013, Colbert Fossil Plant ("Colbert") Unit 5 and Johnsonville Fossil Plant ("Johnsonville") Units 5, 6, 9, and 10 were idled. In addition, Units 7 and 8 at Johnsonville were idled on March 1, 2012, and Unit 10 at Shawnee Fossil Plant ("Shawnee") was idled in October 2010 and subsequently retired on June 30, 2014.

On November 14, 2013, the TVA Board of Directors (the "TVA Board") approved the retirement of Colbert Units 1-5 no later than June 30, 2016, and the retirement of Widows Creek Unit 8. Additionally, the TVA Board approved the retirement of Paradise Fossil Plant ("Paradise") Units 1 and 2 upon the completion of a natural gas-fired plant at the Paradise location.

On August 21, 2014, the TVA Board approved the retirement of Allen Fossil Plant ("Allen") Units 1-3 upon the completion of a natural gas-fired plant at the Allen location, but no later than December 31, 2018.

## Edgar Filing: Tennessee Valley Authority - Form 10-K

On May 7, 2015, the TVA Board approved the retirement of Widows Creek Unit 7 no later than October 31, 2015, and Johnsonville Units 1-4 by December 31, 2017. TVA retired Widows Creek Units 7 and 8 on September 30, 2015.

Depreciation rates are adjusted to reflect current assumptions so that the units will be fully depreciated by the applicable idle dates. As a result of TVA's decision to idle or retire units, TVA recognized \$383 million, \$206 million, and \$49 million in accelerated depreciation expense related to the units during the years ended September 30, 2015, 2014, and 2013, respectively.

**Capital Lease Agreements.** Property, plant, and equipment also includes assets recorded under capital lease agreements. These primarily consist of a natural gas lateral pipeline, power production facilities, water treatment assets, and land of \$94 million and \$102 million at September 30, 2015 and 2014, respectively. Amortization expense related to capital leases is included in Depreciation and amortization in TVA's statements of operations.

**Allowance for Funds Used During Construction.** AFUDC capitalized during the year ended September 30, 2015, was \$214 million, as compared to \$175 million capitalized during the year ended September 30, 2014. TVA may capitalize interest on eligible projects as AFUDC, based on the average interest rate of TVA's outstanding debt. The allowance is applicable to

## Table of Contents

construction in progress related to eligible projects with (1) an expected total project cost of \$1.0 billion or more, and (2) an estimated construction period of at least three years in duration. During 2015, the TVA Board approved that AFUDC will only be applied to the Watts Bar Unit 2 completion project during 2016. The accumulated balance of costs, which is used to calculate AFUDC, averaged approximately \$4.1 billion for the year ended September 30, 2015. Subsequent to August 31, 2013, the accumulated balance of costs for Bellefonte Nuclear Plant ("Bellefonte") was removed from this calculation.

**Software Costs.** TVA capitalizes certain costs incurred in connection with developing or obtaining internal-use software. Capitalized software costs are included in Property, plant, and equipment on the consolidated balance sheets and are amortized primarily over five years. At September 30, 2015 and 2014, unamortized computer software costs totaled \$18 million and \$22 million, respectively. Amortization expense related to capitalized computer software costs was \$38 million, \$31 million, and \$31 million for 2015, 2014, and 2013, respectively. Software costs that do not meet capitalization criteria are expensed as incurred.

**Impairment of Assets.** TVA evaluates long-lived assets for impairment when events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. For long-lived assets, TVA bases its evaluation on impairment indicators such as the nature of the assets, the future economic benefit of the assets, any historical or future profitability measurements, and other external market conditions or factors that may be present. If such impairment indicators are present or other factors exist that indicate that the carrying amount of an asset may not be recoverable, TVA determines whether an impairment has occurred based on an estimate of undiscounted cash flows attributable to the asset as compared with the carrying value of the asset. If an impairment has occurred, the amount of the impairment recognized is measured as the excess of the asset's carrying value over its fair value. Additionally, TVA regularly evaluates construction projects. If the project is canceled or deemed to have no future economic benefit, the project is written off as an asset impairment or, upon Board approval, reclassified as a regulatory asset.

### Decommissioning Costs

TVA recognizes legal obligations associated with the future retirement of certain tangible long-lived assets. These obligations relate to fossil fuel-fired generating plants, nuclear generating plants, hydroelectric generating plants/dams, transmission structures, and other property-related assets. These other property-related assets include, but are not limited to, easements and coal rights. Activities involved with retiring these assets could include decontamination and demolition of structures, removal and disposal of wastes, and site restoration. Revisions to the estimates of asset retirement obligations ("AROs") are made whenever factors indicate that the timing or amounts of estimated cash flows have changed. Any accretion or depreciation expense related to these liabilities and assets is charged to a regulatory asset. See Note 9 — Nuclear Decommissioning Costs and Non-Nuclear Decommissioning Costs and Note 13.

### Blended Low-Enriched Uranium Program

Under the blended low-enriched uranium ("BLEU") program, TVA, the U.S. Department of Energy ("DOE"), and certain nuclear fuel contractors have entered into agreements providing for the DOE's surplus of enriched uranium to be blended with other uranium down to a level that allows the blended uranium to be fabricated into fuel that can be used in nuclear power plants. Under the terms of an interagency agreement between TVA and the DOE, in exchange for supplying highly enriched uranium materials to the appropriate third-party fuel processors for processing into usable BLEU fuel for TVA, the DOE participates to a degree in the savings generated by TVA's use of this blended nuclear fuel. Over the life of the program, TVA projects that the DOE's share of savings generated by TVA's use of this blended nuclear fuel could result in payments to the DOE of as much as \$162 million. TVA accrues an obligation with each BLEU reload batch related to the portion of the ultimate future payments estimated to be attributable to the BLEU fuel currently in use. At September 30, 2015, TVA had paid out approximately \$131 million for this program,



and the obligation recorded was \$12 million.

#### Investment Funds

Investment funds consist primarily of trust funds designated to fund decommissioning requirements (see Note 22 — Contingencies — Decommissioning Costs), the Supplemental Executive Retirement Plan ("SERP") (see Note 21 — Overview of Plans and Benefits — Supplemental Executive Retirement Plan), and the Long-Term Deferred Compensation Plan ("LTDCP"). The NDT holds funds for the ultimate decommissioning of TVA's nuclear power plants. The ART holds funds for the costs related to the future closure and retirement of TVA's other long-lived assets. NDT and SERP funds are invested in portfolios of securities generally designed to achieve a return in line with overall equity market performance, while ART and LTDCP funds are invested in portfolios of securities generally designed to achieve a return in line with overall equity and debt market performance. The NDT funds, ART funds, SERP funds, and LTDCP funds are all classified as trading.

## Table of Contents

### Energy Prepayment Obligations

In 2004, TVA and its largest customer, Memphis Light, Gas and Water Division ("MLGW"), entered into an energy prepayment agreement under which MLGW prepaid TVA \$1.5 billion for the future costs of electricity to be delivered by TVA to MLGW over a period of 180 months. TVA accounted for the prepayment as unearned revenue and is reporting the obligation to deliver power under this arrangement as Energy prepayment obligations and Current portion of energy prepayment obligations on the September 30, 2015 and 2014 Consolidated Balance Sheets. TVA expects to recognize approximately \$100 million of noncash revenue in each year of the arrangement as electricity is delivered to MLGW based on the ratio of units of kilowatt hours delivered to total units of kilowatt hours under contract. At September 30, 2015, approximately \$1.2 billion had been recognized as noncash revenue on a cumulative basis during the life of the agreement, \$100 million of which was recognized as noncash revenue during each of 2015, 2014, and 2013.

Discounts, which are recorded as a reduction to electricity sales, amounted to \$46 million for each of the years ended September 30, 2015, 2014, and 2013.

### Insurance

Although TVA uses private companies to administer its healthcare plans for eligible active and retired employees not covered by Medicare, TVA does not purchase health insurance. Third-party actuarial specialists assist TVA in determining certain liabilities for self-insured claims. TVA recovers the costs of claims through power rates and through adjustments to the participants' contributions to their benefit plans. These liabilities are included in Other liabilities on the balance sheets.

TVA sponsors an Owner Controlled Insurance Program which provides workers' compensation and liability insurance for a select group of contractors performing maintenance, modifications, outage, and new construction activities at TVA facilities.

The Federal Employees' Compensation Act ("FECA") governs liability to employees for service-connected injuries. TVA purchases excess workers' compensation insurance above a self-insured retention.

In addition to excess workers' compensation insurance, TVA purchases the following types of insurance:

• Nuclear liability insurance; nuclear property, decommissioning, and decontamination insurance; and nuclear accidental outage insurance. See Note 22 — Contingencies — Nuclear Insurance.

• Excess liability insurance for aviation, auto, marine, and general liability exposures.

• Property insurance for certain conventional (non-nuclear) assets.

The insurance policies are subject to the terms and conditions of the specific policy, including deductibles or self-insured retentions. To the extent insurance would not provide either a partial or total recovery of the costs associated with a loss, TVA would have to recover any such costs through other means, including through power rates.

### Research and Development Costs

Research and development costs are expensed when incurred. TVA's research programs include those related to power delivery technologies, emerging technologies (clean energy, renewables, distributed resources, and energy

efficiency), technologies related to generation (fossil fuel, nuclear, and hydroelectric), and environmental technologies.

#### Tax Equivalents

The TVA Act requires TVA to make payments to states and counties in which TVA conducts its power operations and in which TVA has acquired power properties previously subject to state and local taxation. The total amount of these payments is five percent of gross revenues from sales of power during the preceding year, excluding sales or deliveries to other federal agencies and off-system sales with other utilities, with a provision for minimum payments under certain circumstances. TVA calculates tax equivalent expense by subtracting the prior year fuel cost-related tax equivalent regulatory asset or liability from the payments made to the states and counties and adding back the current year fuel cost-related tax equivalent regulatory asset or liability. Fuel cost-related tax equivalent expense is recognized in the same accounting period in which the fuel cost-related revenue is recognized.

#### Maintenance Costs

TVA records maintenance costs and repairs related to its property, plant, and equipment in the statements of operations as they are incurred except for the recording of certain regulatory assets for retirement and removal costs.

## Table of Contents

### 2. Impact of New Accounting Standards and Interpretations

The following accounting standard became effective for TVA on October 1, 2014.

**Liabilities.** In February 2013, the Financial Accounting Standards Board ("FASB") issued guidance on liabilities, which defines how entities measure obligations from joint and several liability arrangements for which the total amount of the obligation is fixed at the reporting date and for which no guidance exists, except for obligations addressed within existing guidance in GAAP. The guidance also requires entities to disclose the nature and amount of the obligation as well as other information about those obligations. The standard became effective for TVA on October 1, 2014, and is applied on a retrospective basis for all comparative periods presented. Adoption of this guidance did not have a material impact on TVA's financial condition, results of operations, or cash flows.

The following accounting standard was adopted by TVA as of September 30, 2015.

**Fair Value Measurements.** In May 2015, the FASB issued guidance that removes the requirement to categorize within the fair value hierarchy all investments for which fair value is measured using the net asset value per share practical expedient. Investments measured at net asset value per share using the practical expedient will be presented as a reconciling item between the fair value hierarchy disclosure and the investment line item on the statement of financial position. This guidance also removes the requirement to make certain disclosures for all investments that are eligible to be measured at fair value using the net asset value per share practical expedient. Rather, those disclosures are limited to investments for which the entity has elected to measure the fair value using the practical expedient. The guidance is effective for fiscal years beginning after December 15, 2015, and for interim periods within those years, and early adoption is permitted. The guidance is required to be applied retrospectively to all prior periods presented. TVA has early adopted this guidance as of September 30, 2015. Adoption of this guidance did not have an impact on TVA's financial condition, results of operations, or cash flows.

The following accounting standards have been issued, but as of September 30, 2015, were not effective and had not been adopted by TVA.

**Revenue Recognition.** In May 2014, the FASB issued a new revenue recognition standard that applies to revenue from contracts with customers. The standard requires that an entity recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued a one-year deferral of the effective date. The standard becomes effective for TVA on October 1, 2018, and allows for either a full retrospective or a modified retrospective application. Early adoption of the standard is permitted for TVA on October 1, 2017. TVA is currently evaluating the potential impact of these changes on its consolidated financial statements and related disclosures and the application method to be used.

**Consolidation.** In February 2015, the FASB issued guidance that amends the consolidation analysis for VIEs as well as voting interest entities. The standard reduces the number of consolidation models through the elimination of the indefinite deferral for certain entities that was previously allowed and places more emphasis on risk of loss when determining a controlling financial interest. The standard becomes effective for TVA on October 1, 2016, and allows for either a full retrospective or a modified retrospective application. TVA has evaluated the impact of adopting this guidance and expects no material impact on TVA's financial condition, results of operations, or cash flows.

**Debt Issuance Costs.** In April 2015, the FASB issued guidance that changes the presentation of debt issuance costs in financial statements. This standard requires that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct reduction of that debt liability, consistent with debt discounts. The guidance does not change the recognition and measurement of debt issuance costs. The standard becomes effective for TVA on October

1, 2016, and early adoption is permitted. The guidance is required to be applied retrospectively to all prior periods presented. TVA has early adopted this guidance as of October 1, 2015. If the guidance had been adopted by TVA as of September 30, 2015, TVA would have reclassified \$80 million of debt issuance costs from Other long-term assets as a reduction to Long-term power bonds, net and Long-term debt, net of variable interest entities.

**Inventory Valuation.** In July 2015, the FASB issued guidance that changes the model used for the subsequent measurement of inventory from the previous lower of cost or market model, to the lower of cost or net realizable value. The guidance applies only to inventory valued using methods other than last-in, first out (“LIFO”) or the retail inventory method (for example, first-in, first-out (“FIFO”) or average cost). This amendment is intended to simplify the subsequent measurement of inventory. The standard becomes effective for TVA on October 1, 2017, including interim periods within that fiscal year, and is required to be applied prospectively. Early adoption is permitted. TVA is currently evaluating the potential impact of these changes on its consolidated financial statements.

Table of Contents

## 3. Restructuring

As part of cost reduction initiatives, an organizational restructuring occurred in 2014, which resulted in approximately 2,000 position reductions achieved through attrition, elimination of vacant positions, and employees leaving TVA either voluntarily or involuntarily. In May 2015, TVA announced an additional limited reduction in force for selected business units of approximately 200 positions. Certain employees were eligible for severance payments as a result of these cost reduction initiatives. These severance amounts are included in Accounts payable and accrued liabilities and Other long-term liabilities, as applicable, on the consolidated balance sheets. The restructuring expenses are included in Operating and maintenance on the consolidated statements of operations. The table below summarizes the activity related to severance costs:

## Severance Cost Liability Activity

For the years ended September 30

	2015	2014
Severance cost liability at beginning of period	\$45	\$—
Liabilities incurred during the period	9	65
Actual costs paid during the period	(45	) (20
Adjustments to estimate during the period	(1	) —
Severance cost liability at end of period	\$8	\$45

## 4. Accounts Receivable, Net

Accounts receivable primarily consist of amounts due from customers for power sales. The table below summarizes the types and amounts of TVA's accounts receivable:

## Accounts Receivable, Net

At September 30

	2015	2014
Power receivables	\$1,509	\$1,576
Other receivables	92	101
Allowance for uncollectible accounts	(1	) (1
Accounts receivable, net	\$1,600	\$1,676

## 5. Inventories, Net

The table below summarizes the types and amounts of TVA's inventories:

## Inventories, Net

At September 30

	2015	2014
Materials and supplies inventory	\$651	\$616
Fuel inventory	414	473
Emission allowance inventory, net	13	13
Allowance for inventory obsolescence	(47	) (46
Inventories, net	\$1,031	\$1,056

## 6. Acquisition

On April 14, 2015, TVA acquired a 700-megawatt combined-cycle gas plant located in Ackerman, Mississippi, from Quantum Choctaw Power, an affiliate of Quantum Utility Generation. TVA has purchased the electricity generated

by the plant since 2008. TVA acquired the plant for total cash consideration of \$342 million. The plant is located within TVA's service area and is already connected to TVA's transmission grid. The plant is expected to provide greater transmission flexibility and system reliability as TVA retires older, coal-burning units. The facility has been renamed Ackerman Combined Cycle Plant. The purchase price allocation of the fair value of the assets acquired consisted of \$333 million of Completed plant, \$6 million of Other long-term assets, and \$3 million of Inventories, net. Transaction costs were expensed as incurred and were not material.

Table of Contents

## 7. Net Completed Plant

Net completed plant consisted of the following:

Net Completed Plant

At September 30

	2015			2014		
	Cost	Accumulated Depreciation	Net	Cost	Accumulated Depreciation	Net
Coal-fired	\$15,202	\$9,942	\$5,260	\$14,078	\$9,065	\$5,013
Gas and oil-fired	3,794	1,194	2,600	3,411	1,094	2,317
Nuclear	18,920	10,063	8,857	18,489	9,593	8,896
Transmission	6,803	2,823	3,980	6,519	2,683	3,836
Hydroelectric	2,702	911	1,791	2,547	889	1,658
Other electrical plant	1,678	997	681	1,550	885	665
Subtotal	49,099	25,930	23,169	46,594	24,209	22,385
Multipurpose dams	928	371	557	928	364	564
Other stewardship	42	17	25	42	16	26
Subtotal	970	388	582	970	380	590
Total	\$50,069	\$26,318	\$23,751	\$47,564	\$24,589	\$22,975

## 8. Other Long-Term Assets

The table below summarizes the types and amounts of TVA's other long-term assets:

Other Long-Term Assets

At September 30

	2015	2014
EnergyRight® receivables	\$124	\$123
Unamortized debt issue cost of power bonds and variable interest entities	80	68
Loans and other long-term receivables, net	126	87
Commodity contract derivative assets	1	—
Prepaid capacity payments	52	58
Currency swap assets, net	25	—
Restricted cash	—	64
Other	75	83
Total other long-term assets	\$483	\$483

In association with the EnergyRight® Solutions program, LPCs offer financing to end-use customers for the purchase of energy-efficient equipment. Depending on the nature of the energy-efficiency project, loans may have a maximum term of five years or ten years. TVA purchases the resulting loans receivable from its LPCs. The loans receivable are then transferred to a third-party bank with which TVA has agreed to repay in full any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. Given this continuing involvement, TVA accounts for the transfer of the loans receivable as secured borrowings. The current and long-term portions of the loans receivable are reported in Accounts receivable, net and Other long-term assets, respectively, on TVA's consolidated balance sheets. As of September 30, 2015 and September 30, 2014, the carrying amount of the loans receivable, net of discount, reported in Accounts receivable, net was approximately \$32 million and \$33 million, respectively. See Note 12 for information regarding the associated financing obligation.





Table of Contents

## 9. Regulatory Assets and Liabilities

Regulatory assets generally represent incurred costs that have been deferred because such costs are probable of future recovery in customer rates. Regulatory liabilities generally represent obligations to make refunds to customers for previous collections for costs that are not likely to be incurred or deferral of gains that will be credited to customers in future periods. Components of regulatory assets and regulatory liabilities are summarized in the table below.

## Regulatory Assets and Liabilities

At September 30

	2015	2014
Current regulatory assets		
Deferred nuclear generating units	\$237	\$237
Unrealized losses on commodity derivatives	162	134
Environmental agreements	47	54
Environmental cleanup costs – Kingston ash spill	43	47
Fuel cost adjustment receivable	15	9
Other current regulatory assets	2	—
Total current regulatory assets	506	481
Non-current regulatory assets		
Deferred pension costs and other post-retirement benefits costs	5,565	4,297
Unrealized losses on interest rate derivatives	1,236	957
Nuclear decommissioning costs	1,003	931
Environmental cleanup costs - Kingston ash spill	348	421
Non-nuclear decommissioning costs	828	645
Deferred nuclear generating units	1,042	1,255
Environmental agreements	55	108
Unrealized losses on commodity derivatives	63	72
Other non-current regulatory assets	278	308
Total non-current regulatory assets	10,418	8,994
Total regulatory assets	\$10,924	\$9,475
Current regulatory liabilities		
Fuel cost adjustment tax equivalents	\$164	\$182
Unrealized gains on commodity derivatives	—	2
Total current regulatory liabilities	164	184
Non-current regulatory liabilities		
Unrealized gains on commodity derivatives	2	—
Total non-current regulatory liabilities	2	—
Total regulatory liabilities	\$166	\$184

Unrealized Gains (Losses) on Commodity Derivatives. Unrealized gains (losses) on coal purchase contracts, included as part of unrealized gains (losses) on commodity derivatives, relate to the mark-to-market ("MtM") valuation of coal purchase contracts. These contracts qualify as derivative contracts but do not qualify for cash flow hedge accounting treatment. As a result, TVA recognizes the changes in the market value of these derivative contracts as a regulatory liability or asset. This treatment reflects TVA's ability and intent to recover the cost of these commodity contracts on a settlement basis for ratemaking purposes through the fuel cost adjustment. TVA recognizes the actual cost of fuel received under these contracts in fuel expense at the time the fuel is used to generate electricity. These contracts expire at various times through 2018. Unrealized gains and losses on contracts with a maturity of less than one year are included as a current regulatory asset or liability on TVA's consolidated balance sheets. See Note 16.

Deferred gains and losses relating to TVA's Financial Trading Program ("FTP") represent net unrealized gains and losses on swaps, futures, options, and/or combinations of these instruments and are also included as part of unrealized gains (losses) on commodity derivatives. The program is used to reduce TVA's economic risk exposure associated with purchases and sales of commodities used in electricity generation, purchases, and sales. TVA defers all FTP MtM unrealized gains or losses as regulatory liabilities or assets, respectively, and records realized gains or losses in fuel and purchased power expense

Table of Contents

to match the delivery period of the underlying commodity product. Net unrealized losses at September 30, 2015, and September 30, 2014, were approximately \$116 million and \$103 million, respectively. This accounting treatment reflects TVA's ability and intent to recover the cost of these commodity contracts in future periods through the fuel cost adjustment. The current regulatory asset/liability for net unrealized gains and losses, included as part of the commodity derivatives, represents deferred gains and losses from contracts with a maturity of less than one year.

**Deferred Nuclear Generating Units.** TVA's 2015 Integrated Resource Plan, adopted by the TVA Board in August 2015, does not envision any immediate needs for significant baseload plants such as Bellefonte. Work on the Bellefonte Unit 1 site was slowed in 2014, and TVA has been focused on preserving Bellefonte for potential future development. In November 2013, the TVA Board approved the treatment of all amounts currently included in Construction in progress related to Bellefonte as a regulatory asset. Additionally, the TVA Board approved combining (1) the amounts related to Bellefonte previously included in Construction in progress, (2) the \$619 million in Regulatory asset-Construction costs, and (3) the remaining amounts included in Regulatory asset-Deferred nuclear generating units into a single regulatory asset titled Deferred nuclear generating units totaling \$1.3 billion at September 30, 2015. Such amounts have been classified as a Regulatory asset in the September 30, 2015 Consolidated Balance Sheet. The TVA Board approved the recovery of this asset in future rates at an amount of \$237 million per year until fully recovered. The amount to be amortized over the next year is included as a current regulatory asset on TVA's consolidated balance sheets.

**Environmental Agreements.** In conjunction with the Environmental Agreements (see Note 22 — Legal Proceedings — Environmental Agreements), TVA recorded certain liabilities totaling \$360 million (\$290 million investment in energy efficiency projects, demand response projects, renewable energy projects, and other TVA projects; \$60 million to be provided to Alabama, Kentucky, North Carolina, and Tennessee to fund environmental projects with preference for projects in the Tennessee River watershed; and \$10 million in civil penalties). The TVA Board determined that these costs would be collected in customer rates in the future, and, accordingly, the amounts were deferred as a regulatory asset. Through the end of 2015, \$188 million has been paid with respect to environmental projects, \$60 million has been paid to Alabama, Kentucky, North Carolina, and Tennessee, and \$10 million has been paid with respect to civil penalties. The remaining deferred amounts will be charged to expense and recovered in rates over future periods as payments are made.

**Environmental Cleanup Costs – Kingston Ash Spill.** In August 2009, TVA began using regulatory accounting treatment to defer all actual costs incurred and expected future costs related to the Kingston Fossil Plant ("Kingston") ash spill. The TVA Board approved a plan to amortize these costs over 15 years beginning October 1, 2009. Insurance proceeds are recorded as reductions to the regulatory asset and will reduce amounts collected in future rates. Amounts included as a current regulatory asset on TVA's consolidated balance sheets represent the amount to be amortized in the next 12 months. See Note 11.

**Fuel Cost Adjustment Receivable.** The fuel cost adjustment provides a mechanism to alter rates monthly to reflect changing fuel and purchased power costs, including realized gains and losses relating to transactions under TVA's FTP. There is typically a lag between the occurrence of a change in fuel and purchased power costs and the reflection of the change in fuel rates. Balances in the fuel cost adjustment regulatory accounts represent over-collected or under-collected revenues that offset fuel and purchased power costs and are recovered or refunded in fuel rates.

**Deferred Pension Costs and Other Post-retirement Benefit Costs.** TVA measures its benefit obligations related to pension and other post-retirement benefit ("OPEB") costs at each year-end balance sheet date. TVA recognizes the funded status of the plans on TVA's consolidated balance sheets which in an unregulated environment would result in a corresponding offset to accumulated other comprehensive income (loss) ("AOCI"). "Incurred cost" is a cost arising from cash paid out or an obligation to pay for an acquired asset or service, and a loss from any cause that has been sustained and for which payment has been or must be made. In the cases of pension and OPEB costs, the unfunded

obligation represents a projected liability to the employee for services rendered, and thus it meets the definition of an incurred cost. Therefore, amounts that otherwise would be charged to AOCI for these costs are recorded as a regulatory asset since TVA has historically recovered pension and OPEB expense in rates. Through historical and current year expense included in ratemaking, the TVA Board has demonstrated the ability and intent to include pension and OPEB costs in allowable costs and in rates for ratemaking purposes. As a result, it is probable that future revenue will result from inclusion of the pension and OPEB regulatory assets in allowable costs for ratemaking purposes.

These regulatory assets are classified as long-term, which is consistent with the pension and post-retirement liabilities, and not amortized to the consolidated statements of operations over a specified recovery period. They are adjusted either upward or downward each year in conjunction with the adjustments to the unfunded pension liability, as calculated by the actuaries. Ultimately this regulatory asset will be recognized in the consolidated statements of operations in the form of pension expense as the actuarial liability is eliminated in future periods. See Note 21 — Obligations and Funded Status.

Additionally on October 1, 2014, TVA began recognizing pension costs as regulatory assets to the extent that the amount calculated under GAAP as pension expense differs from the amount TVA contributes to the pension plan.

**Unrealized Losses on Interest Rate Derivatives.** TVA uses regulatory accounting treatment to defer the unrealized gains and losses on certain interest rate derivative contracts. When these contracts actually settle, the realized gains or losses are included in the ratemaking formula. The unrealized losses on these interest rate derivatives are recorded on TVA's

Table of Contents

consolidated balance sheets as non-current regulatory assets, and the related realized gains or losses, if any, are recorded in TVA's consolidated statements of operations.

**Nuclear Decommissioning Costs.** Nuclear decommissioning costs include: (1) certain deferred charges related to the future closure and decommissioning of TVA's nuclear generating units under the Nuclear Regulatory Commission ("NRC") requirements, (2) recognition of changes in the liability, (3) recognition of changes in the value of TVA's Nuclear Decommissioning Trust ("NDT"), and (4) certain other deferred charges under the accounting rules for AROs. These future costs will be funded through a combination of the NDT, future earnings on the NDT, and, if necessary, additional TVA cash contributions to the NDT and future earnings thereon. See Note 1 — Investment Funds. There is not a specified recovery period; therefore, the regulatory asset is classified as long-term consistent with the NDT investments and ARO liability.

**Non-Nuclear Decommissioning Costs.** Non-nuclear decommissioning costs include: (1) certain deferred charges related to the future closure and decommissioning of TVA's non-nuclear long-lived assets, (2) recognition of changes in the liability, (3) recognition of changes in the value of TVA's Asset Retirement Trust ("ART"), and (4) certain other deferred charges under the accounting rules for AROs. TVA has established the ART to more effectively segregate, manage, and invest funds to help meet future non-nuclear AROs. The funds from the ART may be used, among other things, to pay the costs related to the future closure and retirement of non-nuclear long-lived assets under various legal requirements. These future costs can be funded through a combination of investment funds already set aside in the ART, future earnings on those investment funds, and future cash contributions to the ART and future earnings thereon. For 2016, TVA will recover in rates a portion of its estimated current year non-nuclear decommissioning costs and contributions to the ART. Deferred charges will be recovered in rates in 2017 and beyond based on an analysis of the expected expenditures, contributions, and investment earnings required to recover the decommissioning costs.

**Other Non-Current Regulatory Assets.** Other non-current regulatory assets consist of the following:

**Debt Reacquisition Costs.** Reacquisition expenses, call premiums, and other related costs, such as unamortized debt issue costs associated with redeemed Bond issues, are deferred and amortized (accrued) on a straight-line basis over the weighted average life of TVA's debt portfolio.

**Nuclear Training Costs.** As a result of refurbishing and restarting Browns Ferry Unit 1 in 2007 and the construction and startup of Watts Bar Nuclear Plant ("Watts Bar") Unit 2, nuclear training costs associated with these units have been deferred as a regulatory asset and will be amortized over a cost recovery period equivalent to the expected useful life of the operating nuclear units.

**Retirement Removal Costs.** Retirement removal costs that are not legally required are capitalized into fixed assets to be depreciated consistent with the lives in the depreciation study. See Note 1 — Property, Plant, and Equipment, and Depreciation — Depreciation. The TVA Board has consistently set rates to cover the depreciation of these assets; therefore, these assets are probable of future recovery.

**Fuel Cost Adjustment Tax Equivalents.** The fuel cost adjustment includes a provision related to the current funding of the future payments TVA will make. As TVA records the fuel cost adjustment, the percent of the calculation that relates to a future asset or liability for tax equivalent payments is recorded as a current regulatory asset or liability and paid in the following year.

10. Variable Interest Entities

A VIE is an entity that either (1) has insufficient equity to permit the entity to finance its activities without additional subordinated financial support or (2) has equity investors who lack the characteristics of owning a controlling financial interest. The analysis to determine whether an entity is a VIE considers factors such as contracts with an entity, credit support for an entity, the adequacy of the equity investment of an entity, the extent of an entity's activities that either involve or are conducted on behalf of an investor with disproportionate voting rights, and the relationship of voting power to the amount of equity invested in an entity. A VIE is consolidated by its primary beneficiary. The primary beneficiary has both (i) the power to direct the activities that most significantly impact the entity's economic performance and (ii) the obligation to absorb losses or the right to receive benefits from the entity that could potentially be significant to the VIE. The determination of the primary beneficiary requires continual reassessment.

When TVA determines that it has a variable interest in a VIE, a qualitative evaluation is performed to assess which interest holders have the power to direct the activities that most significantly impact the economic performance of the entity and have the obligation to absorb losses or receive benefits that could be significant to the entity. The evaluation considers the purpose and design of the business, the risks that the business was designed to create and pass along to other entities, the activities of the business that can be directed and which party can direct them, and the expected relative impact of those activities on the economic performance of the business through its life. TVA has the power to direct the activities of an entity when it has the ability to make key operating and financing decisions, including, but not limited to, capital investment and the issuance of debt.

Table of Contents

Southaven

On August 9, 2013, TVA entered into a lease financing arrangement with Southaven Combined Cycle Generation LLC ("SCCG") for the lease by TVA of the Southaven Combined Cycle Facility ("Southaven CCF"). SCCG is a special single-purpose limited liability company formed in June 2013 to finance the Southaven CCF through a \$360 million secured notes issuance (the "SCCG notes") and the issuance of \$40 million of membership interests subject to mandatory redemption. The membership interests were purchased by Southaven Holdco LLC ("SHLLC"). Southaven Holdco LLC ("SHLLC") is a special single-purpose entity, also formed in June 2013, established to acquire and hold the membership interests of SCCG. A non-controlling interest in SHLLC is held by a third party through nominal membership interests, to which none of the income, expenses, and cash flows of SHLLC are allocated.

The membership interests held by SHLLC were purchased with proceeds from the issuance of \$40 million of secured notes (the "SHLLC notes") and are subject to mandatory redemption pursuant to a schedule of amortizing, semi-annual payments due each February 15 and August 15, with a final payment due on August 15, 2033. The payment dates for the mandatorily redeemable membership interests are the same as those of the SHLLC notes and the payment amounts are sufficient to provide returns on, as well as returns of, capital until the investment has been repaid to SHLLC in full. The rate of return on investment to SHLLC is 7.0 percent, which is reflected as interest expense in the consolidated statements of operations. SHLLC is required to pay a pre-determined portion of the return on investment to Seven States Southaven, LLC ("SSSL") on each lease payment date as agreed in SHLLC's formation documents (the "Seven States Return"). The current and long-term portions of the Membership interests of VIE subject to mandatory redemption are included in Accounts payable and accrued liabilities and Other long-term liabilities, respectively.

The payment dates for the mandatorily redeemable membership interests are the same as those of the SHLLC notes. The sale of the SCCG notes, the membership interests in SCCG, and the SHLLC notes all closed on August 9, 2013. The SCCG notes are secured by TVA's lease payments, and the SHLLC notes are secured by SHLLC's investment in, and amounts receivable from, SCCG. TVA's lease payments to SCCG are payable on the same dates as SCCG's and SHLLC's semi-annual debt service payments and are equal to the sum of (i) the amount of SCCG's semi-annual debt service payments, (ii) the amount of SHLLC's semi-annual debt service payments, and (iii) the amount of the Seven States Return. In addition to the lease payments, TVA pays administrative and miscellaneous expenses incurred by SCCG and SHLLC. Certain agreements related to this transaction contain default and acceleration provisions.

In the event that TVA were to choose to exercise an early buy out feature of the Southaven Facility Lease, in part or in whole, TVA must pay to SCCG amounts sufficient for SCCG to repay or partially repay on a pro rata basis the membership interests held by SHLLC, including any outstanding investment amount plus accrued but unpaid return. TVA also has the right, at any time and without any early redemption of the other portions of the Southaven Facility Lease payments due to SCCG, to fully repay SHLLC's investment, upon which repayment SHLLC will transfer the membership interests to a designee of TVA.

TVA participated in the design, business conduct, and financial support of SCCG and has determined that it has a direct variable interest in SCCG resulting from risk associated with the value of the Southaven CCF at the end of the lease term. Based on its analysis, TVA has determined that it is the primary beneficiary of SCCG and, as such, is required to account for the VIE on a consolidated basis.

John Sevier

On January 17, 2012, TVA entered into a \$1.0 billion construction management agreement and lease financing arrangement with John Sevier Combined Cycle Generation LLC ("JSCCG") for the completion and lease by TVA of the John Sevier Combined Cycle Facility ("John Sevier CCF"). JSCCG is a special single-purpose limited liability



company formed in January 2012 to finance the John Sevier CCF through a \$900 million secured note issuance (the "JSCCG notes") and the issuance of \$100 million of membership interests subject to mandatory redemption. The membership interests were purchased by John Sevier Holdco LLC ("Holdco"). Holdco is a special single-purpose entity, also formed in January 2012, established to acquire and hold the membership interests in JSCCG. A non-controlling interest in Holdco is held by a third party through nominal membership interests, to which none of the income, expenses, and cash flows is allocated.

The membership interests held by Holdco in JSCCG were purchased with proceeds from the issuance of \$100 million of secured notes (the "Holdco notes") and are subject to mandatory redemption pursuant to scheduled amortizing, semi-annual payments due each January 15 and July 15, with a final payment due on January 15, 2042. The payment dates for the mandatorily redeemable membership interests are the same as those of the Holdco notes. The sale of the JSCCG notes, the membership interests in JSCCG, and the Holdco notes closed on January 17, 2012. The JSCCG notes are secured by TVA's lease payments, and the Holdco notes are secured by Holdco's investment in, and amounts receivable from, JSCCG. TVA's lease payments to JSCCG are equal to and payable on the same dates as JSCCG's and Holdco's semi-annual debt service payments. In addition to the lease payments, TVA pays administrative and miscellaneous expenses incurred by JSCCG and Holdco. Certain agreements related to this transaction contain default and acceleration provisions.

Due to its participation in the design, business conduct, and credit and financial support of JSCCG and Holdco, TVA has determined that it has a variable interest in each of these entities. Based on its analysis, TVA has concluded that it is the

Table of Contents

primary beneficiary of JSCCG and Holdco and, as such, is required to account for the VIEs on a consolidated basis. Holdco's membership interests in JSCCG are eliminated in consolidation.

The financial statement items attributable to carrying amounts and classifications of JSCCG, Holdco, and SCCG as of September 30, 2015 and 2014, as reflected in the Consolidated Balance Sheets, are as follows:

## Summary of Impact of VIEs on Consolidated Balance Sheets

At September 30

	2015	2014
Current liabilities of VIE		
Accrued interest of VIE	\$12	\$12
Current portion of membership interests of VIE subject to mandatory redemption	2	2
Current maturities of long-term debt of VIE	33	32
Total current liabilities of VIE	47	46
Other liabilities of VIE		
Membership interests of VIE subject to mandatory redemption	35	37
Long-term debt of VIE, net		
Long-term debt of VIE	1,246	1,279
Total liabilities of VIE	\$1,328	\$1,362

Interest expense of \$63 million, \$64 million and \$50 million related to debt of variable interest entities and membership interests of variable interest entity subject to mandatory redemption is included in the Consolidated Statements of Operations for the years ended September 30, 2015, 2014, and 2013, respectively.

Creditors of the VIEs do not have any recourse to the general credit of TVA. TVA does not have any obligations to provide financial support to the VIEs other than as prescribed in the terms of the agreements related to these transactions.

## 11. Kingston Fossil Plant Ash Spill

## The Event

In December 2008, one of the dredge cells at Kingston failed, and over five million cubic yards of water and coal fly ash flowed out of the cell. TVA, in coordination with federal and state agencies, has completed cleanup and recovery efforts. TVA completed the removal of time-critical ash from the river during the third quarter of 2010. In November 2012, the EPA and the Tennessee Department of Environment and Conservation ("TDEC") approved a plan to allow the Emory River's natural processes to remediate the remaining ash in the river, and to conduct a long-term monitoring program. TVA submitted a final completion report to the EPA on April 22, 2015, for review and approval. The report was approved by the EPA on September 9, 2015.

## Claims and Litigation

See Note 22 — Legal Proceedings — Legal Proceedings Related to the Kingston Ash Spill and — Civil Penalty and Natural Resource Damages for the Kingston Ash Spill.

## Financial Impact

In August 2009, TVA began using regulatory accounting treatment to defer all actual costs already incurred and expected future costs related to the ash spill. The cost is being charged to expense as it is collected in rates over 15 years, beginning October 1, 2009. As of September 30, 2015, TVA had spent \$1.1 billion related to the ash spill. The remaining estimated liability at September 30, 2015 was \$6 million and is included in Accounts payable and accrued liabilities.

#### Insurance

TVA had property and excess liability insurance programs in place at the time of the Kingston ash spill. TVA pursued claims under both the property and excess liability programs and has settled all of its property insurance claims and some of its excess liability insurance claims. In April 2012, TVA initiated arbitration proceedings against the remaining excess liability insurance companies in accordance with the policies' dispute resolution provisions. TVA is seeking recovery of certain costs incurred in the cleanup project, including the costs of removing ash from property or waters owned by the State of Tennessee, and related expenses. TVA has received total insurance proceeds of \$336 million, of which \$63 million was received during the year ended September 30, 2015, and \$7 million was received in November 2015. The insurance proceeds are being recorded as reductions to the regulatory asset and will reduce costs collected in future rates.

Table of Contents

## 12. Other Long-Term Liabilities

Other long-term liabilities consist primarily of liabilities related to certain derivative agreements as well as liabilities under agreements related to compliance with certain environmental regulations (see Note 22 — Legal Proceedings — Environmental Agreements). The table below summarizes the types and amounts of Other long-term liabilities:

## Other Long-Term Liabilities

At September 30

	2015	2014
Interest rate swap liabilities	\$1,627	\$1,348
EnergyRight® financing obligation	148	152
Environmental agreements liability	55	108
Currency swap liabilities	47	15
Membership interests of VIE subject to mandatory redemption	35	37
Commodity contract derivative liabilities	17	17
Commodity swap derivative liabilities	10	14
Other	280	271
Total other long-term liabilities	\$2,219	\$1,962

EnergyRight® Purchase Obligation. TVA purchases certain loans receivable from its LPCs in association with the EnergyRight® Solutions program. Depending on the nature of the energy-efficiency project, loans may have a maximum term of five years or ten years. The loans receivable are then transferred to a third-party bank with which TVA has agreed to repay in full any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. Given this continuing involvement, TVA accounts for the transfer of the loans receivable as secured borrowings. The current and long-term portions of the resulting financing obligation are reported in Accounts payable and accrued liabilities and Other long-term liabilities, respectively, on TVA's consolidated balance sheets. As of September 30, 2015 and September 30, 2014, the carrying amount of the financing obligation reported in Accounts payable and accrued liabilities was approximately \$37 million and \$38 million, respectively. See Note 8 for information regarding the associated loans receivable.

## 13. Asset Retirement Obligations

During the year ended September 30, 2015, TVA's total ARO liability increased \$674 million.

In April 2015, the EPA published its final rule governing coal combustion residuals, which regulates landfill and impoundment location, design, and operations; dictates certain pond-closure conditions; and establishes groundwater monitoring and closure and post-closure standards. As a result of the ruling, TVA made revisions to the assumptions and estimates used to calculate its coal ash AROs. Increases to estimated project costs, including expansion of work scope and higher costs of materials, resulted in an increase of \$469 million of the ARO liability during the year ended September 30, 2015. TVA continues to evaluate the impact of the rule on its operations, including cost and timing estimates of related projects. As a result, further adjustments to its ARO liabilities may be required as estimates are refined. Also during 2015, TVA recorded additional obligations of \$94 million for other new AROs related to TVA's coal-fired plants and \$7 million related to the acquisition of the Ackerman Combined Cycle Plant. See Note 6. Additionally, an increase of \$36 million for estimate revisions resulting from a license extension granted to the Sequoyah Nuclear Plant ("Sequoyah") and a decrease of \$25 million for other non-nuclear changes in estimates were recorded.

To estimate its decommissioning obligation related to its nuclear generating stations, TVA uses a probability-weighted, discounted cash flow model which, on a unit-by-unit basis, considers multiple outcome

scenarios that include significant estimations and assumptions. Those assumptions include (1) estimates of the cost of decommissioning, (2) the method of decommissioning and the timing of the related cash flows, (3) the license period of the nuclear plant, considering the probability of license extensions, (4) cost escalation factors, and (5) the credit adjusted risk free rate to measure the obligation at the present value of the future estimated costs. Prior to June 30, 2014, TVA based its decommissioning cost estimates on cost elements prescribed by the NRC to dismantle and decommission the radioactive portion of each site with the assumption that decommissioning would occur within the first seven years after plant shut down, which approximates the DECON method of decommissioning. The DECON method requires that radioactive contamination is removed from a site and safely disposed of or decontaminated to a level that permits the site to be released for unrestricted use shortly after it ceases operation. On June 30, 2014, TVA recorded a change in estimate based on site-specific decommissioning cost studies. Additionally, TVA determined it appropriate to reflect an increase in the probability that certain of its nuclear operating licenses will be extended and that there is a probability that it will be able to delay ultimate decommissioning activities under a SAFSTOR method of decommissioning. The SAFSTOR method allows nuclear facilities to be placed and maintained in a condition that allows the facilities to be safely stored and subsequently decontaminated to levels that permit release for unrestricted use. As such, TVA ascribed probabilities

Table of Contents

to both the SAFSTOR and DECON methods of decommissioning in order to estimate its decommissioning obligation. Decommissioning cost studies will be updated for each of TVA's nuclear units at least every five years.

During the years ended September 30, 2015 and 2014, both the nuclear and non-nuclear liabilities were increased by periodic accretion, partially offset by ash area settlement projects that were conducted during these periods. The nuclear and non-nuclear accretion amounts were deferred as regulatory assets. During 2015 and 2014, \$44 million and \$40 million, respectively, of the related regulatory assets, were amortized into expense as these amounts were collected in rates.

## Asset Retirement Obligation Activity

	Nuclear	Non-Nuclear	Total	
Balance at September 30, 2013	\$2,399	\$1,089	\$3,488	
Settlements (ash storage areas)	—	(14	) (14	)
Change in estimate (nuclear site - specific studies)	(472	) —	(472	)
Change in estimate (other)	—	(10	) (10	)
Accretion (recorded to regulatory asset)	125	52	177	
Balance at September 30, 2014	\$2,052	\$1,117	\$3,169	(1)
Settlements (ash storage areas)	—	(58	) (58	)
Change in estimate (coal combustion residuals rule)	—	469	469	
Change in estimate (nuclear license extension)	36	—	36	
Change in estimate (other)	—	(25	) (25	)
Additional obligations	—	101	101	
Accretion (recorded to regulatory asset)	99	52	151	
Balance at September 30, 2015	\$2,187	\$1,656	\$3,843	(1)

## Note

(1) The current portions of ARO in the amounts of \$161 million and \$80 million as of September 30, 2015 and 2014, respectively, are included in Accounts payable and accrued liabilities.

## 14. Debt and Other Obligations

## General

The TVA Act authorizes TVA to issue Bonds in an amount not to exceed \$30.0 billion at any time. At September 30, 2015, TVA had only two types of Bonds outstanding: power bonds and discount notes. Power bonds have maturities between one and 50 years, and discount notes have maturities of less than one year. Power bonds and discount notes are both issued pursuant to Section 15d of the TVA Act and pursuant to the Basic Tennessee Valley Authority Power Bond Resolution adopted by the TVA Board on October 6, 1960, as amended on September 28, 1976, October 17, 1989, and March 25, 1992 (the "Basic Resolution"). Bonds are not obligations of the United States, and the United States does not guarantee the payments of principal or interest on Bonds.

Power bonds and discount notes rank on parity and have first priority of payment from net power proceeds, which are defined as the remainder of TVA's gross power revenues after deducting the costs of operating, maintaining, and administering its power properties and tax equivalent payments, but before deducting depreciation accruals or other charges representing the amortization of capital expenditures, plus the net proceeds from the sale or other disposition of any power facility or interest therein.

TVA considers its scheduled rent payments under its leaseback transactions, as well as its scheduled payments under its lease financing arrangements involving John Sevier CCF and Southaven CCF, as costs of operating, maintaining, and administering its power properties; however, such treatment is not free from doubt. Costs of operating, maintaining, and administering TVA's power properties have priority over TVA's payments on the Bonds. Once net power proceeds have been applied to payments on power bonds and discount notes as well as any other Bonds that TVA may issue in the future that rank on parity with or subordinate to power bonds and discount notes, Section 2.3 of the Basic Resolution provides that the remaining net power proceeds shall be used only for minimum payments into the U.S. Treasury required by the TVA Act in repayment of, and as a return on, the Power Program Appropriation Investment, investment in power assets, additional reductions of TVA's capital obligations, and other lawful purposes related to TVA's power program.

## Table of Contents

The TVA Act and the Basic Resolution each contain two bond tests: the rate test and the bondholder protection test. Under the rate test, TVA must charge rates for power which will produce gross revenues sufficient to provide funds for, among other things, debt service on outstanding Bonds. As of September 30, 2015, TVA was in compliance with the rate test. See Note 1 — General. Under the bondholder protection test, TVA must, in successive five-year periods, use an amount of net power proceeds at least equal to the sum of (1) the depreciation accruals and other charges representing the amortization of capital expenditures and (2) the net proceeds from any disposition of power facilities for either the reduction of its capital obligations (including Bonds and the Power Program Appropriation Investment) or investment in power assets.

TVA met the bondholder protection test for the five-year period ended September 30, 2015, and must next meet the bondholder protection test for the five-year period ending September 30, 2020.

### Secured Debt of VIEs

On August 9, 2013, SCCG issued secured notes totaling \$360 million that bear interest at a rate of 3.846 percent. The SCCG notes require amortizing semi-annual payments on each February 15 and August 15, and mature on August 15, 2033. Also on August 9, 2013, SCCG issued \$40 million of membership interests subject to mandatory redemption. The proceeds from the secured notes issuance and the issuance of the membership interests was paid to TVA in accordance with the terms of the Southaven head lease. See Note 10 — Southaven. TVA used the proceeds from the transaction primarily to fund the acquisition of the Southaven CCF from SSSL.

On January 17, 2012, JSCCG issued secured notes totaling \$900 million in aggregate principal amount that bear interest at a rate of 4.626 percent. Also on January 17, 2012, Holdco issued secured notes totaling \$100 million that bear interest at a rate of 7.1 percent. The JSCCG notes and the Holdco notes require amortizing semi-annual payments on each January 15 and July 15, and mature on January 15, 2042. The Holdco notes require a \$10 million balloon payment upon maturity. See Note 10 — John Sevier. TVA used the proceeds from the transaction to meet its requirements under the TVA Act.

Secured debt of VIEs, including current maturities, outstanding at both September 30, 2015 and 2014 totaled approximately \$1.3 billion.

### Short-Term Debt

The weighted average rates applicable to short-term debt outstanding at September 30, 2015, 2014, and 2013, were 0.055 percent, 0.002 percent, and 0.042 percent, respectively. During 2015, 2014, and 2013, the maximum month-end outstanding balances of TVA short-term borrowings held by the public were \$2.6 billion, \$2.4 billion, and \$3.3 billion, respectively. For these same years, the average amounts (and weighted average interest rates) of TVA short-term borrowings were approximately \$1.4 billion (0.051 percent), \$1.7 billion (0.051 percent), and \$1.9 billion (0.078 percent), respectively.

### Put and Call Options

Bond issues of \$456 million held by the public are redeemable in whole or in part, at TVA's option, on call dates ranging from the present to 2020 and at call prices of 100 percent of the principal amount. Twelve Bond issues totaling \$316 million, with maturity dates ranging from 2025 to 2043, include a "survivor's option," which allows for right of redemption upon the death of a beneficial owner in certain specified circumstances. These Bonds were classified as long-term as of September 30, 2015 and 2014.



Additionally, TVA has two issues of Putable Automatic Rate Reset Securities ("PARRS") outstanding. After a fixed-rate period of five years, the coupon rate on the PARRS may automatically be reset downward under certain market conditions on an annual basis. The coupon rate reset on the PARRS is based on a calculation. For both series of PARRS, the coupon rate will reset downward on the reset date if the rate calculated is below the then-current coupon rate on the Bond. The calculation dates, potential reset dates, and terms of the calculation are different for each series. The coupon rate on the 1998 Series D PARRS may be reset on June 1 (annually) if the sum of the five-day average of the 30-Year Constant Maturity Treasury ("CMT") rate for the week ending the last Friday in April, plus 94 basis points, is below the then-current coupon rate. The coupon rate on the 1999 Series A PARRS may be reset on May 1 (annually) if the sum of the five-day average of the 30-Year CMT rate for the week ending the last Friday in March, plus 84 basis points, is below the then-current coupon rate. The coupon rates may only be reset downward, but investors may request to redeem their Bonds at par value in conjunction with a coupon rate reset for a limited period of time prior to the reset dates under certain circumstances.

The coupon rate for the 1998 Series D PARRS, which mature in June 2028, has been reset seven times, from an initial rate of 6.750 percent to the current rate of 3.550 percent. In connection with these resets, \$301 million of the Bonds have been redeemed, so that \$274 million of the Bonds were outstanding at September 30, 2015. The coupon rate for the 1999 Series A PARRS, which mature in May 2029, has been reset six times, from an initial rate of 6.50 percent to the current rate of 3.360 percent. In connection with these resets, \$293 million of the Bonds have been redeemed, so that \$232 million of the Bonds were outstanding at September 30, 2015.

Table of Contents

Due to the contingent nature of the put option on the PARRS, TVA determines whether the PARRS should be classified as long-term debt or current maturities of long-term debt by calculating the expected reset rate for the bonds on the calculation dates, described above. If the reset rate is less than the then-current coupon rate on the PARRS, the PARRS are included in current maturities. Otherwise, the PARRS are included in long-term debt. At September 30, 2015, TVA has not determined that it is probable that the reset rate will be less than the current coupon rate on the PARRS on the calculation dates; therefore, the par amount outstanding for each series of PARRS was classified as long-term debt.

## Debt Securities Activity

The table below summarizes the long-term debt securities activity for the period from October 1, 2013, to September 30, 2015.

## Debt Securities Activity

For the years ended September 30

	2015	2014
Issues		
2014 Series A <sup>(1)</sup>	—	1,000
2015 Series A <sup>(2)</sup>	1,000	—
Discount on debt issues	(27	) (11
Total	\$973	\$989
Redemptions/Maturities <sup>(3)</sup>		
Variable interest entities	\$32	\$30
electronotes <sup>®</sup>	62	335
1998 Series D	50	—
1999 Series A	38	—
2005 Series B	1,000	—
2009 Series A	3	4
2009 Series B	27	26
Total	\$1,212	\$395

## Notes

(1) The 2014 Series A bonds were issued at 98.94 percent of par.

(2) The 2015 Series A bonds were issued at 97.31 percent of par.

(3) All redemptions were at 100 percent of par.

Table of Contents

## Debt Outstanding

Total debt outstanding at September 30, 2015, and 2014, consisted of the following:

## Short-Term Debt

At September 30

CUSIP or Other Identifier	Maturity	Call/(Put) Date	Coupon Rate	2015	2014
Short-term debt, net of discounts				\$1,034	\$596
Current maturities of long-term debt of variable interest entities issued at par				33	32
Current maturities of power bonds issued at par					
880591EE8	11/15/2015		2.250%	2	3
880591EF5	12/15/2015		3.770%	27	26
880591DY5	6/15/2015		4.375%	—	1,000
88059TEL1	11/15/2015		2.650%	3	3
Total current maturities of power bonds issued at par				32	1,032
Total current debt outstanding, net				\$1,099	\$1,660

Edgar Filing: Tennessee Valley Authority - Form 10-K

Table of Contents

Long-Term Debt<sup>(1)</sup>

At September 30

CUSIP or Other Identifier	Maturity	Coupon Rate	Call Date	2015 Par	2014 Par	Stock Exchange Listings
electronotes <sup>®(2)</sup>	05/15/2020 - 02/15/2043	2.375 - 4.375%	2/15/2015 - 02/15/2018	\$325	\$387	None
880591EE8 <sup>(3)</sup>	11/15/2015	2.250%		—	2	None
880591DS8	12/15/2016	4.875%		524	524	New York
880591EA6	7/18/2017	5.500%		1,000	1,000	New York, Luxembourg
880591CU4	12/15/2017	6.250%		650	650	New York
880591EC2	4/1/2018	4.500%		1,000	1,000	New York, Luxembourg
880591EQ1	10/15/2018	1.750%		1,000	1,000	New York
880591EL2	2/15/2021	3.875%		1,500	1,500	New York
880591DC3	6/7/2021	5.805%	<sup>(4)</sup>	303	324	New York, Luxembourg
880591EN8	8/15/2022	1.875%		1,000	1,000	New York
880591ER9	9/15/2024	2.875%		1,000	1,000	New York
880591CJ9	11/1/2025	6.750%		1,350	1,350	New York, Hong Kong, Luxembourg, Singapore
880591300 <sup>(5)</sup>	6/1/2028	3.550%		274	324	New York
880591409 <sup>(5)</sup>	5/1/2029	3.360%		232	270	New York
880591DM1	5/1/2030	7.125%		1,000	1,000	New York, Luxembourg
880591DP4	6/7/2032	6.587%	<sup>(4)</sup>	378	406	New York, Luxembourg
880591DV1	7/15/2033	4.700%		472	472	New York, Luxembourg
880591EF5 <sup>(3)</sup>	6/15/2034	3.770%		360	388	None
880591DX7	6/15/2035	4.650%		436	436	New York
880591CK6	4/1/2036	5.980%		121	121	New York
880591CS9	4/1/2036	5.880%		1,500	1,500	New York
880591CP5	1/15/2038	6.150%		1,000	1,000	New York
880591ED0	6/15/2038	5.500%		500	500	New York
880591EH1	9/15/2039	5.250%		2,000	2,000	New York
880591EP3	12/15/2042	3.500%		1,000	1,000	New York
880591DU3	6/7/2043	4.962%	<sup>(4)</sup>	227	243	New York, Luxembourg
880591CF7	7/15/2045	6.235%	7/15/2020	140	140	New York
880591EB4	1/15/2048	4.875%		500	500	New York, Luxembourg
880591DZ2	4/1/2056	5.375%		1,000	1,000	New York
880591EJ7	9/15/2060	4.625 %		1,000	1,000	New York
880591ES7	9/15/2065	4.250%		1,000	—	New York
Subtotal				22,792	22,037	



Table of Contents

Unamortized discounts, premiums, and other	(108	) (89	)
Total long-term outstanding power bonds, net	22,684	21,948	
Long-term debt of variable interest entities	1,246	1,279	
Total long-term debt, net	\$23,930	\$23,227	

## Notes

(1) Includes net exchange gain (loss) from currency transactions of \$21 million at September 30, 2015 and \$(44) million at September 30, 2014.

(2) Includes one electronotes<sup>®</sup> issue (88059TEL1) with partial maturities of principal for each required annual payment.

(3) These Bonds include partial maturities of principal for each required annual payment.

(4) The coupon rate represents TVA's effective interest rate.

(5) TVA PARRS, CUSIP numbers 880591300 and 880591409, may be redeemed under certain conditions. See Put and Call Options above.

## Maturities Due in the Year Ending September 30

	2016	2017	2018	2019	2020	Thereafter	Total
Long-term power bonds and long-term debt of variable interest entities including current maturities <sup>(1)</sup>	\$65	\$1,590	\$1,718	\$1,070	\$70	\$19,611	\$24,124
Short-term debt, net of discounts	1,034	—	—	—	—	—	1,034

## Note

(1) Does not include noncash items of foreign currency exchange gain of \$21 million and net discount on sale of Bonds of \$108 million.

## Credit Facility Agreements

TVA and the U.S. Treasury, pursuant to the TVA Act, have entered into a memorandum of understanding under which the U.S. Treasury provides TVA with a \$150 million credit facility. This credit facility was renewed for 2016 with a maturity date of September 30, 2016. Access to this credit facility or other similar financing arrangements with the U.S. Treasury has been available to TVA since the 1960s. TVA can borrow under the U.S. Treasury credit facility only if it cannot issue Bonds in the market on reasonable terms, and TVA considers the U.S. Treasury credit facility a secondary source of liquidity. The interest rate on any borrowing under this facility is based on the average rate on outstanding marketable obligations of the United States with maturities from date of issue of one year or less. There were no outstanding borrowings under the facility at September 30, 2015. The availability of this credit facility may be impacted by how the U.S. government addresses the situation of approaching its debt limit.

TVA also has funding available in the form of three long-term revolving credit facilities totaling \$2.5 billion. One \$500 million credit facility matures on February 1, 2020, one \$1.0 billion credit facility matures on June 2, 2020, and another \$1.0 billion credit facility matures on September 30, 2020. The interest rate on any borrowing under these facilities varies based on market factors and the rating of TVA's senior unsecured long-term non-credit-enhanced debt. TVA is required to pay an unused facility fee on the portion of the total \$2.5 billion that TVA has not borrowed or committed under letters of credit. This fee, along with letter of credit fees, may fluctuate depending on the rating of TVA's senior unsecured long-term non-credit-enhanced debt. At September 30, 2015, and September 30, 2014, there were \$1.1 billion and \$1.0 billion, respectively, of letters of credit outstanding under the facilities, and there were no

borrowings outstanding. See Note 16 — Other Derivative Instruments — Collateral.

The following table provides additional information regarding TVA's funding available in the form of three long-term revolving credit facilities:

Summary of Long-Term Credit Facilities

At September 30, 2015

(in billions)

Maturity Date	Facility Limit	Letters of Credit Outstanding	Cash Borrowings	Availability
February 2020	\$0.5	\$0.5	\$—	\$—
June 2020	1.0	0.3	—	0.7
September 2020	1.0	0.3	—	0.7
Total	\$2.5	\$1.1	\$—	\$1.4

## Table of Contents

### Lease/Leasebacks

Prior to 2004, TVA received approximately \$945 million in proceeds by entering into leaseback transactions for 24 new peaking combustion turbine units ("CTs"). TVA also received approximately \$389 million in proceeds by entering into lease/leaseback transactions for qualified technological equipment and software ("QTE") in 2003. Due to TVA's continuing involvement in the operation and maintenance of the leased units and equipment and its control over the distribution of power produced by the combustion turbine facilities during the leaseback term, TVA accounted for the lease proceeds as financing obligations. At September 30, 2015, and September 30, 2014, the outstanding leaseback obligations related to CTs and QTE were \$616 million and \$691 million, respectively.

### 15. Accumulated Other Comprehensive Income (Loss)

AOCI represents market valuation adjustments related to TVA's currency swaps. The currency swaps are cash flow hedges and are the only derivatives in TVA's portfolio that have been designated and qualify for hedge accounting treatment. TVA records exchange rate gains and losses on its foreign currency-denominated debt in net income and marks its currency swap assets and liabilities to market through other comprehensive income (loss) ("OCI"). TVA then reclassifies an amount out of AOCI into net income, offsetting the exchange gain/loss recorded on the debt. For the year-ended September 30, 2015, TVA reclassified \$65 million of losses related to its cash flow hedges from AOCI to Interest expense. For the year-ended September 30, 2014, TVA reclassified \$2 million of gains related to its cash flow hedges from AOCI to Interest expense. See Note 16.

TVA records certain assets and liabilities that result from the regulated ratemaking process that would not be recorded under GAAP for non-regulated entities. As such, certain items that would generally be reported in AOCI or that would impact the statements of operations are recorded as regulatory assets or regulatory liabilities. See Note 8, Note 16 — Overview of Accounting Treatment, Note 17, and Note 21.

### 16. Risk Management Activities and Derivative Transactions

TVA is exposed to various risks. These include risks related to commodity prices, investment prices, interest rates, currency exchange rates, and inflation as well as counterparty credit and performance risks. To help manage certain of these risks, TVA has entered into various derivative transactions, principally commodity option contracts, forward contracts, swaps, swaptions, futures, and options on futures. Other than certain derivative instruments in its trust investment funds, it is TVA's policy to enter into these derivative transactions solely for hedging purposes and not for speculative purposes. TVA plans to continue to manage fuel price volatility through various methods, but is currently evaluating the future use of financial instruments.

### Overview of Accounting Treatment

TVA recognizes certain of its derivative instruments as either assets or liabilities on its consolidated balance sheets at fair value. The accounting for changes in the fair value of these instruments depends on (1) whether TVA uses regulatory accounting to defer the derivative gains and losses, (2) whether the derivative instrument has been designated and qualifies for hedge accounting treatment, and (3) if so, the type of hedge relationship (for example, cash flow hedge).

The following tables summarize the accounting treatment that certain of TVA's financial derivative transactions receive.

Summary of Derivative Instruments That Receive Hedge Accounting Treatment (part 1)  
Amount of Mark-to-Market Gain (Loss) Recognized in Other Comprehensive Income (Loss)  
For the years ended September 30



Edgar Filing: Tennessee Valley Authority - Form 10-K

Derivatives in Cash Flow Hedging Relationship	Objective of Hedge Transaction	Accounting for Derivative Hedging Instrument	2015	2014
Currency swaps	To protect against changes in cash flows caused by changes in foreign currency exchange rates (exchange rate risk)	Unrealized gains and losses are recorded in AOCI and reclassified to interest expense to the extent they are offset by gains and losses on the hedged transaction	\$(72	) \$4

Table of Contents

Summary of Derivative Instruments That Receive Hedge Accounting Treatment (part 2)  
Amount of Gain (Loss) Reclassified from OCI to Interest Expense  
For the years ended September 30

Derivatives in Cash Flow Hedging Relationship	2015	2014
Currency swaps	\$(65	) \$2

## Note

There were no ineffective portions or amounts excluded from effectiveness testing for any of the periods presented. Based on forecasted foreign currency exchange rates, TVA expects to reclassify approximately \$14 million of losses from AOCI to interest expense within the next twelve months to offset amounts anticipated to be recorded in interest expense related to exchange gain on the debt.

Summary of Derivative Instruments That Do Not Receive Hedge Accounting Treatment  
Amount of Gain (Loss) Recognized in Income on Derivatives<sup>(1)</sup>  
For the years ended September 30

Derivative Type	Objective of Derivative	Accounting for Derivative Instrument	2015	2014
Interest rate swaps	To fix short-term debt variable rate to a fixed rate (interest rate risk)	MtM gains and losses are recorded as regulatory assets or liabilities. Realized gains and losses are recognized in interest expense when payments are made or received on the swap settlement dates. <sup>(2)</sup>	\$(114	) \$(114 )
Commodity contract derivatives	To protect against fluctuations in market prices of purchased coal or natural gas (price risk)	MtM gains and losses are recorded as regulatory assets or liabilities. Realized gains and losses due to contract settlements are recognized in fuel expense as incurred.	—	(64 )
Commodity derivatives under FTP	To protect against fluctuations in market prices of purchased commodities (price risk)	MtM gains and losses are recorded as regulatory assets or liabilities. Realized gains and losses are recognized in fuel expense or purchased power expense when the related commodity is used in production.	(98	) (43 )

## Notes

(1) All of TVA's derivative instruments that do not receive hedge accounting treatment have unrealized gains (losses) that would otherwise be recognized in income but instead are deferred as regulatory assets and liabilities. As such,

there was no related gain (loss) recognized in income for these unrealized gains (losses) for the years ended September 30, 2015 and 2014.

(2) Generally, TVA maintains a level of outstanding discount notes equal to or greater than the notional amount of the interest rate swaps. However, in September 2015 TVA issued long-term Bonds in anticipation of the maturity of other long-term debt, and used the proceeds to pay down discount notes, which caused the balance of discount notes outstanding at September 30, 2015, to temporarily fall below the notional amount of the interest rate swaps.

108

---

Table of Contents

## Fair Values of TVA Derivatives

At September 30

	2015		2014	
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Derivatives that Receive Hedge Accounting Treatment:				
Currency swaps				
£200 million Sterling	\$(41	) Other long-term liabilities	\$(15	) Other long-term liabilities
£250 million Sterling	25	Other long-term assets	56	Other long-term assets
£150 million Sterling	(6	) Other long-term liabilities	8	Other long-term assets
Derivatives that Do Not Receive Hedge Accounting Treatment:				
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Interest rate swaps				
\$1.0 billion notional	(1,177	) Other long-term liabilities	(987	) Other long-term liabilities
\$476 million notional	(438	) Other long-term liabilities	(349	) Other long-term liabilities
\$42 million notional	(12	) Other long-term liabilities	(12	) Other long-term liabilities
		Other long-term assets \$1;		Other current assets \$1;
		Other long-term liabilities		Other long-term liabilities
Commodity contract derivatives	(97	) \$(17); Accounts payable and accrued liabilities	(96	) \$(17); Accounts payable and accrued liabilities
		\$(81)		\$(80)
FTP		Other current assets \$(89);		Other current assets \$(69);
		Other long-term liabilities		Other long-term liabilities
Derivatives under FTP <sup>(1)</sup>	(116	) \$(10); Accounts payable and accrued liabilities	(103	) \$(14); Accounts payable and accrued liabilities
		\$(17)		\$(20)

## Note

(1) Fair values of certain derivatives under the FTP that were in net liability positions totaling \$89 million and \$69 million at September 30, 2015 and September 30, 2014, respectively, are recorded in TVA's margin cash accounts in Other current assets. These derivatives are transacted with futures commission merchants, and cash deposits have been posted to the margin cash accounts held with each futures commission merchant to offset the net liability positions in full.

## Cash Flow Hedging Strategy for Currency Swaps

To protect against exchange rate risk related to three British pound sterling denominated Bond transactions, TVA entered into foreign currency hedges at the time the Bond transactions occurred. TVA had the following currency swaps outstanding at September 30, 2015:

## Currency Swaps Outstanding

At September 30, 2014

Effective Date of Currency Swap Contract	Associated TVA Bond Issues Currency Exposure	Expiration Date of Swap	Overall Effective Cost to TVA
1999	£200 million	2021	5.81%
2001	£250 million	2032	6.59%
2003	£150 million	2043	4.96%

When the dollar strengthens against the British pound sterling, the exchange gain on the Bond liability is offset by an exchange loss on the swap contract. Conversely, when the dollar weakens against the British pound sterling, the exchange loss on the Bond liability is offset by an exchange gain on the swap contract. All such exchange gains or losses on the Bond liability are included in Long-term debt, net. The offsetting exchange losses or gains on the swap contracts are recognized in AOCI. If any gain (loss) were to be incurred as a result of the early termination of the foreign currency swap contract, the resulting income (expense) would be amortized over the remaining life of the associated Bond as a component of Interest expense.

Table of Contents

## Derivatives Not Receiving Hedge Accounting Treatment

Interest Rate Derivatives. TVA uses regulatory accounting treatment to defer the MtM gains and losses on its interest rate swaps. The net deferred unrealized gains and losses are classified as regulatory assets or liabilities on TVA's consolidated balance sheets and are included in the ratemaking formula when the transactions settle. The values of these derivatives are included in Other long-term assets or Other long-term liabilities on the consolidated balance sheets, and realized gains and losses, if any, are included in TVA's consolidated statements of operations. For the years ended September 30, 2015 and 2014, the changes in market value of the interest rate derivatives resulted in deferred unrealized losses of \$279 million and \$149 million, respectively.

Commodity Derivatives. TVA enters into certain derivative contracts for coal and natural gas that require physical delivery of the contracted quantity of the commodity. TVA marks to market all such contracts and defers the fair values as regulatory assets or liabilities on a gross basis. At September 30, 2015, TVA's coal and natural gas contract derivatives both had terms of up to three years.

## Commodity Contract Derivatives

At September 30

	2015			2014		
	Number of Contracts	Notional Amount	Fair Value (MtM)	Number of Contracts	Notional Amount	Fair Value (MtM)
Coal contract derivatives	14	19 million tons	\$(98)	24	31 million tons	\$(86)
Natural gas contract derivatives	33	134 million mmBtu	\$1	46	62 million mmBtu	\$(10)

Derivatives Under FTP. While TVA is currently evaluating the use of financial instruments for price hedging, certain natural gas futures and swaps remain as part of the suspended FTP. TVA has a FTP under which it may purchase and sell futures, swaps, options, and combinations of these instruments (as long as they are standard in the industry) to hedge TVA's exposure to (1) the price of natural gas, fuel oil, electricity, coal, emission allowances, nuclear fuel, and other commodities included in TVA's fuel cost adjustment calculation, (2) the price of construction materials, and (3) contracts for goods priced in or indexed to foreign currencies. The combined transaction limit for the fuel cost adjustment and construction material transactions is \$130 million (based on one-day value at risk). In addition, the maximum hedge volume for the construction material transactions is 75 percent of the underlying net notional volume of the material that TVA anticipates using in approved TVA projects, and the market value of all outstanding hedging transactions involving construction materials is limited to \$100 million at the execution of any new transaction. The portfolio value at risk limit for the foreign currency transactions is \$5 million and is separate and distinct from the \$130 million transaction limit discussed above. TVA's policy prohibits trading financial instruments under the FTP for speculative purposes.

At September 30, 2015 and 2014, the risks hedged under the FTP were the economic risks associated with the prices of natural gas, fuel oil, and crude oil. At September 30, 2015 and 2014, TVA had no outstanding coal contract derivatives under the FTP. There were no futures contracts or options contracts outstanding under the FTP at September 30, 2015 or 2014, and swap contracts under the FTP had remaining terms of three years or less.

## Derivatives under Financial Trading Program

At September 30

	2015		2014	
	Notional Amount	Fair Value (MtM) (in millions)	Notional Amount	Fair Value (MtM) (in millions)
Natural gas (in mmBtu)				

Edgar Filing: Tennessee Valley Authority - Form 10-K

Swap contracts	51,495,000	\$(116	)	102,227,500	\$(103	)
----------------	------------	--------	---	-------------	--------	---

Note

Fair value amounts presented are based on the net commodity position with the counterparty. Notional amounts disclosed represent the net absolute value of contractual amounts.

110

---

Table of Contents

TVA defers all FTP unrealized gains (losses) as regulatory liabilities (assets) and records realized gains or losses to match the delivery period of the underlying commodity. In addition to the open commodity derivatives disclosed above, TVA had closed derivative contracts with market values of \$(11) million at September 30, 2015, and \$(5) million at September 30, 2014. TVA experienced the following unrealized and realized gains and losses related to the FTP at the dates and during the periods, as applicable, set forth in the tables below:

Financial Trading Program Unrealized Gains (Losses)

At September 30

FTP unrealized gains (losses) deferred as regulatory liabilities (assets)	2015		2014	
Natural gas	\$(116	)	\$(103	)

Financial Trading Program Realized Gains (Losses)

For the years ended September 30

Decrease (increase) in fuel expense	2015		2014	
Natural gas	\$(79	)	\$(34	)
Fuel oil/crude oil	1		2	

Financial Trading Program Realized Gains (Losses)

For the years ended September 30

Decrease (increase) in purchased power expense	2015		2014	
Natural gas	\$(20	)	\$(11	)



Table of Contents

## Offsetting of Derivative Assets and Liabilities

The amounts of TVA's derivative instruments as reported in the Consolidated Balance Sheets as of September 30, 2015, and September 30, 2014, are shown in the table below.

	As of September 30, 2015		
	Gross Amounts of Recognized Assets/Liabilities	Gross Amounts Offset in the Balance Sheet <sup>(1)</sup>	Net Amounts of Assets/Liabilities Presented in the Balance Sheet <sup>(2)</sup>
<b>Assets</b>			
Currency swap(s) <sup>(3),(4)</sup>	\$25	\$—	\$25
Commodity derivatives under FTP	49	(49	) —
Total derivatives subject to master netting or similar arrangement	74	(49	) 25
Total derivatives not subject to master netting or similar arrangement	1	—	1
<b>Total</b>	<b>\$75</b>	<b>\$(49</b>	<b>) \$26</b>
<b>Liabilities</b>			
Currency swap(s) <sup>(4)</sup>	\$47	\$—	\$47
Interest rate swaps <sup>(4)</sup>	1,627	—	1,627
Commodity derivatives under FTP	165	(138	) 27
Total derivatives subject to master netting or similar arrangement	1,839	(138	) 1,701
Total derivatives not subject to master netting or similar arrangement	98	—	98
<b>Total</b>	<b>\$1,937</b>	<b>\$(138</b>	<b>) \$1,799</b>
	As of September 30, 2014		
	Gross Amounts of Recognized Assets/Liabilities	Gross Amounts Offset in the Balance Sheet <sup>(1)</sup>	Net Amounts of Assets/Liabilities Presented in the Balance Sheet <sup>(2)</sup>
<b>Assets</b>			
Currency swap(s)	\$64	\$(64	) \$—
Commodity derivatives under FTP	51	(51	) —
Total derivatives subject to master netting or similar arrangement	115	(115	) —
Total derivatives not subject to master netting or similar arrangement	1	—	1
<b>Total</b>	<b>\$116</b>	<b>\$(115</b>	<b>) \$1</b>
<b>Liabilities</b>			
Currency swap(s) <sup>(4)</sup>	\$15	\$—	\$15
Interest rate swaps <sup>(4)</sup>	1,348	—	1,348
Commodity derivatives under FTP	154	(120	) 34

Edgar Filing: Tennessee Valley Authority - Form 10-K

Total derivatives subject to master netting or similar arrangement	1,517	(120	) 1,397
Total derivatives not subject to master netting or similar arrangement	97	—	97
Total	\$1,614	\$(120	) \$1,494

Notes

(1) Amounts primarily include counterparty netting of derivative contracts, margin account deposits for futures commission merchants transactions, and cash collateral received or paid in accordance with the accounting guidance for derivatives and hedging transactions.

(2) There are no derivative contracts subject to a master netting arrangement or similar agreement which are not offset in the balance sheets.

(3) At September 30, 2015, there were no securities posted by a counterparty on TVA's behalf to partially secure the asset position(s) of currency swaps in accordance with the collateral requirements for these derivatives.

(4) Letters of credit of approximately \$1.1 billion and \$1.0 billion were posted as collateral at September 30, 2015 and September 30, 2014, respectively, to partially secure the liability positions of one of the currency swaps and one of the interest rate swaps in accordance with the collateral requirements for these derivatives. TVA held \$15 million and \$19 million cash collateral in excess of collateral requirements at September 30, 2015 and September 30, 2014, respectively. Cash collateral held in excess of collateral requirements is recorded in Restricted cash and investments with a corresponding obligation of the same amount recorded in Accounts payable and accrued liabilities.

Other Derivative Instruments

Investment Fund Derivatives. Investment funds consist primarily of funds held in the NDT, ART, SERP, and LTDCP. All securities in the trusts are classified as trading. See Note 17 — Investments Funds for a discussion of the trusts' objectives and the types of investments included in the various trusts. These trusts may invest in derivative instruments which may include swaps, futures, options, forwards, and other instruments. At September 30, 2015 and September 30, 2014, the NDT held investments in forward contracts to purchase debt securities. The fair values of these derivatives were in liability positions totaling \$59 million at September 30, 2015 and asset positions totaling \$3 million at September 30, 2014.

## Table of Contents

At September 30, 2015, and September 30, 2014, the fair value of other derivative instruments in these trusts was not material to TVA's consolidated financial statements.

Collateral. TVA's interest rate swaps, currency swaps, and commodity derivatives under the FTP contain contract provisions that require a party to post collateral (in a form such as cash or a letter of credit) when the party's liability balance under the agreement exceeds a certain threshold. At September 30, 2015, the aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a liability position was \$1.7 billion. TVA's collateral obligations at September 30, 2015, under these arrangements, were approximately \$1.1 billion, for which TVA had posted approximately \$1.1 billion in letters of credit. These letters of credit reduce the available balance under the related credit facilities. TVA's assessment of the risk of its nonperformance includes a reduction in its exposure under the contract as a result of this posted collateral.

For all of its derivative instruments with credit-risk related contingent features:

If TVA remains a majority-owned U.S. government entity but Standard & Poor's Financial Services, LLC ("S&P") or Moody's Investors Service, Inc. ("Moody's") downgrades TVA's credit rating to AA or Aa2, respectively, TVA's collateral obligations would likely increase by \$22 million; and

If TVA ceases to be majority-owned by the U.S. government, TVA's credit rating would likely be downgraded and TVA would be required to post additional collateral.

## Counterparty Credit Risk

Credit risk is the exposure to economic loss that would occur as a result of a counterparty's nonperformance of its contractual obligations. Where exposed to counterparty credit risk, TVA analyzes the counterparty's financial condition prior to entering into an agreement, establishes credit limits, monitors the appropriateness of those limits, as well as any changes in the creditworthiness of the counterparty on an ongoing basis, and employs credit mitigation measures, such as collateral or prepayment arrangements and master purchase and sale agreements, to mitigate credit risk.

Credit of Customers. The majority of TVA's counterparty credit risk is associated with trade accounts receivable from delivered power sales to LPCs, which are all located in the Tennessee Valley region. To a lesser extent, TVA is exposed to credit risk from directly served industries and federal agencies, and from exchange power arrangements with a small number of investor-owned regional utilities, related to either delivered power or the replacement of open positions of longer-term purchased power or fuel agreements. TVA had concentrations of accounts receivable from three customers that represented 27 percent of total outstanding accounts receivable at both September 30, 2015 and September 30, 2014.

Credit of Derivative Counterparties. TVA has entered into physical and financial contracts that qualify as derivatives for hedging purposes, and TVA's NDT fund and qualified defined benefit pension plan have entered into derivative contracts for investment purposes. If a counterparty to one of TVA's hedging transactions defaults, TVA might incur substantial costs in connection with entering into a replacement hedging transaction. If a counterparty to the derivative contracts into which the NDT fund and the pension plan have entered for investment purposes defaults, the value of the investment could decline significantly or perhaps become worthless. TVA has concentrations of credit risk from the banking and coal industries because multiple companies in these industries serve as counterparties to TVA in various derivative transactions. At September 30, 2015, all of TVA's currency swaps, interest rate swaps, and commodity derivatives under the FTP were with banking counterparties whose Moody's credit rating was Baa1 or higher.

TVA classifies qualifying forward coal contracts as derivatives. At September 30, 2015, these contracts were with suppliers whose Moody's credit rating, or TVA's internal analysis when such information was unavailable, ranged from Ca to Baa3, except for one counterparty whose rating was D. Emerging technologies, environmental regulations, and low gas prices have contributed to weak demand for coal. As a result, coal suppliers are facing increased financial pressure which has led to relatively poor credit ratings. Continued difficulties by coal suppliers could result in consolidations, bankruptcies, restructuring, contract renegotiations, or other alternatives. Under these scenarios and TVA's potential available responses, TVA does not anticipate a significant financial impact in obtaining continued fuel supply for its coal-fired generation. See Derivatives Not Receiving Hedge Accounting Treatment above.

TVA currently utilizes two futures commission merchants ("FCMs") to clear commodity contracts, including futures, options, and similar financial derivatives. These transactions are executed under the FTP by the FCMs on exchanges on behalf of TVA. TVA maintains margin cash accounts with the FCMs. TVA makes deposits to the margin cash accounts to adequately cover any net liability positions on its derivatives transacted with the FCMs. See the note to the Fair Values of TVA Derivatives table above.

Credit of Suppliers. If one of TVA's fuel or purchased power suppliers fails to perform under the terms of its contract with TVA, TVA might lose the money that it paid to the supplier under the contract and have to purchase replacement fuel or power on the spot market, perhaps at a significantly higher price than TVA was entitled to pay under the contract. In addition,

Table of Contents

TVA might not be able to acquire replacement fuel or power in a timely manner and thus might be unable to satisfy its own obligations to deliver power. To help ensure a reliable supply of coal, TVA had coal contracts with multiple suppliers at September 30, 2015. The contracted supply of coal is sourced from multiple geographic regions of the United States and is to be delivered via various transportation methods (for example, barge, rail, and truck). TVA purchases the majority of its natural gas requirements from a variety of suppliers under short-term contracts.

TVA has a power purchase agreement that expires on March 31, 2032, with a supplier of electricity for 440 megawatts ("MW") of summer net capability from a lignite-fired generating plant. TVA has determined that the supplier has the equivalent of a non-investment grade credit rating.

17. Fair Value Measurements

Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the asset or liability's principal market, or in the absence of a principal market, the most advantageous market for the asset or liability in an orderly transaction between market participants. TVA uses market or observable inputs as the preferred source of values, followed by assumptions based on hypothetical transactions in the absence of market inputs.

Valuation Techniques

The measurement of fair value results in classification into a hierarchy by the inputs used to determine the fair value as follows:

Level 1	—	Unadjusted quoted prices in active markets accessible by the reporting entity for identical assets or liabilities. Active markets are those in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing. Pricing inputs other than quoted market prices included in Level 1 that are based on observable market data and that are directly or indirectly observable for substantially the full term of the asset or liability. These include quoted market prices for similar assets or liabilities, quoted market prices for identical or similar assets in markets that are not active, adjusted quoted market prices, inputs from observable data such as interest rate and yield curves, volatilities and default rates observable at commonly quoted intervals, and inputs derived from observable market data by correlation or other means.
Level 2	—	Pricing inputs that are unobservable, or less observable, from objective sources. Unobservable inputs are only to be used to the extent observable inputs are not available. These inputs maintain the concept of an exit price from the perspective of a market participant and should reflect assumptions of other market participants. An entity should consider all market participant assumptions that are available without unreasonable cost and effort. These are given the lowest priority and are generally used in internally developed methodologies to generate management's best estimate of the fair value when no observable market data is available.
Level 3	—	

A financial instrument's level within the fair value hierarchy (where Level 3 is the lowest and Level 1 is the highest) is based on the lowest level of input significant to the fair value measurement.

The following sections describe the valuation methodologies TVA uses to measure different financial instruments at fair value. Except for gains and losses on SERP and LTDCP assets, all changes in fair value of these assets and liabilities have been reflected in regulatory assets, regulatory liabilities, or accumulated other comprehensive income (loss) on TVA's consolidated balance sheets, and consolidated statements of comprehensive income (loss). Except for gains and losses on SERP and LTDCP assets, there has been no impact to TVA's consolidated statements of

operations or its consolidated statements of cash flows related to these fair value measurements.

#### Investments Funds

At September 30, 2015, Investment funds were composed of \$2.0 billion of securities classified as trading and measured at fair value and less than \$1 million of equity investments not required to be measured at fair value. Trading securities are held in the NDT, ART, SERP, and LTDCP. The NDT holds funds for the ultimate decommissioning of TVA's nuclear power plants. The ART holds funds for the costs related to the future closure and retirement of TVA's other long-lived assets. TVA established a SERP for certain executives in critical positions to provide supplemental pension benefits tied to compensation that exceeds limits set by Internal Revenue Service ("IRS") rules applicable to the qualified defined benefit pension plan. The LTDCP is designed to provide long-term incentives to executives to encourage them to stay with TVA and to provide competitive levels of total compensation to such executives. The NDT and SERP are invested in securities generally designed to achieve a return in line with overall equity market performance, and the ART and LTDCP are invested in securities generally designed to achieve a return in line with overall debt and equity market performance.

The NDT, ART, SERP, and LTDCP are composed of multiple types of investments and are managed by external institutional managers. Most U.S. and international equities, Treasury Inflation-Protected Securities, real estate investment

Table of Contents

trust securities, cash securities, and certain derivative instruments are measured based on quoted exchange prices in active markets and are classified as Level 1 valuations. Fixed-income investments, high-yield fixed-income investments, currencies, and most derivative instruments are non-exchange traded and are classified as Level 2 valuations. These measurements are based on market and income approaches with observable market inputs.

Private partnership investments may include holdings of investments in private real estate, venture capital, buyout, mezzanine or subordinated debt, restructuring or distressed debt, and special situations through funds managed by third-party investment managers. Investments in private partnerships generally involve a three-to-four-year period where the investor contributes capital. This is followed by a period of distribution, typically over several years. The investment period is generally, at a minimum, ten years or longer. The NDT had unfunded commitments related to private partnerships of \$89 million at September 30, 2015. These investments have no redemption or limited redemption options and may also impose restrictions on the NDT's ability to liquidate its investments. There are no readily available quoted exchange prices for these investments. The fair value of the investments is based on TVA's ownership percentage of the fair value of the underlying investments as provided by the investment managers. These investments are typically valued on a quarterly basis. TVA's private partnership investments are valued at net asset values ("NAV") as a practical expedient for fair value. TVA classifies its interest in these types of investments as investments measured at net asset value in the fair value hierarchy.

Commingled funds represent investment funds comprising multiple individual financial instruments. The commingled funds held by the NDT, ART, SERP, and LTDCP consist of either a single class of securities, such as equity, debt, or foreign currency securities, or multiple classes of securities. All underlying positions in these commingled funds are either exchange traded or measured using observable inputs for similar instruments. The fair value of commingled funds is based on NAV per fund share (the unit of account), derived from the prices of the underlying securities in the funds. These commingled funds can be redeemed at the measurement date NAV and are classified as investments measured at net asset value in the fair value hierarchy.

Realized and unrealized gains and losses on trading securities are recognized in current earnings and are based on average cost. The gains and losses of the NDT and ART are subsequently reclassified to a regulatory liability or asset account in accordance with TVA's regulatory accounting policy. See Note 1 — Cost-Based Regulation. TVA recorded unrealized gains and losses related to its trading securities held as of the end of each period as follows:

## Unrealized Investment Gains (Losses)

At September 30

Financial Statement Presentation	2015	2014
SERP Other income (expense)	\$(4	) \$1
LTDCP Other income (expense)	(2	) —
NDT Regulatory asset	(47	) 35
ART Regulatory asset	(17	) 15

## Currency and Interest Rate Derivatives

See Note 16 — Cash Flow Hedging Strategy for Currency Swaps and Derivatives Not Receiving Hedge Accounting Treatment for a discussion of the nature, purpose, and contingent features of TVA's currency and interest rate swaps. These swaps are classified as Level 2 valuations and are valued based on income approaches using observable market inputs for similar instruments.

## Commodity Contract Derivatives and Commodity Derivatives Under FTP

Commodity Contract Derivatives. Most of these contracts are valued based on market approaches which utilize short- and mid-term market-quoted prices from an external industry brokerage service. A small number of these contracts are valued based on a pricing model using long-term price estimates from TVA's coal price forecast. To value the volume option component of applicable coal contracts, TVA uses a Black-Scholes pricing model which includes inputs from the forecast, contract-specific terms, and other market inputs. These contracts are classified as Level 3 valuations.

Commodity Derivatives Under FTP. These contracts are valued based on market approaches which utilize Chicago Mercantile Exchange ("CME") quoted prices and other observable inputs. Swap contracts are valued using a pricing model based on CME inputs and are subject to nonperformance risk outside of the exit price. These contracts are classified as Level 2 valuations.

See Note 16 — Derivatives Not Receiving Hedge Accounting Treatment — Commodity Derivatives and — Derivatives Under FTP for a discussion of the nature and purpose of coal contracts and derivatives under TVA's FTP.



Table of Contents

Nonperformance Risk

The assessment of nonperformance risk, which includes credit risk, considers changes in current market conditions, readily available information on nonperformance risk, letters of credit, collateral, other arrangements available, and the nature of master netting arrangements. TVA is a counterparty to currency swaps, interest rate swaps, commodity contracts, and other derivatives which subject TVA to nonperformance risk. Nonperformance risk on the majority of investments and certain exchange-traded instruments held by TVA is incorporated into the exit price that is derived from quoted market data that is used to mark the investment to market.

Nonperformance risk for most of TVA's derivative instruments is an adjustment to the initial asset/liability fair value. TVA adjusts for nonperformance risk, both for TVA (for liabilities) and the counterparty (for assets), by applying credit valuation adjustments ("CVAs"). TVA determines an appropriate CVA for each applicable financial instrument based on the term of the instrument and TVA's or the counterparty's credit rating as obtained from Moody's. For companies that do not have an observable credit rating, TVA uses internal analysis to assign a comparable rating to the company. TVA discounts each financial instrument using the historical default rate (as reported by Moody's for CY 1983 to CY 2014) for companies with a similar credit rating over a time period consistent with the remaining term of the contract. The application of CVAs resulted in a \$1 million decrease in the fair value of both assets and liabilities at September 30, 2015.

Table of Contents

The following tables set forth by level, within the fair value hierarchy, TVA's financial assets and liabilities that were measured at fair value on a recurring basis at September 30, 2015, and September 30, 2014. Financial assets and liabilities have been classified in their entirety based on the lowest level of input that is significant to the fair value measurement. TVA's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the determination of the fair value of the assets and liabilities and their classification in the fair value hierarchy levels.

Fair Value Measurements  
At September 30, 2015

Assets	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Investments				
Equity securities	\$ 166	\$—	\$—	\$ 166
Debt securities				
U.S. government corporations and agencies	203	31	—	234
Corporate debt securities	—	225	—	225
Residential mortgage-backed securities	—	17	—	17
Commercial mortgage-backed securities	—	7	—	7
Collateralized debt obligations	—	29	—	29
Institutional mutual funds	91	—	—	91
Forward debt securities contracts	—	(59	) —	(59 )
Private partnerships measured at net asset value <sup>(1)</sup>	—	—	—	240
Commingled funds measured at net asset value <sup>(1)</sup>	—	—	—	1,061
Total investments	460	250	—	2,011
Currency swap(s) <sup>(2)</sup>	—	25	—	25
Commodity contract derivatives	—	—	1	1
Commodity derivatives under FTP <sup>(2)</sup>	—	—	—	—
Swap contracts	—	—	—	—
Total	\$460	\$275	\$ 1	\$2,037
Liabilities	Quoted Prices in Active Markets for Identical Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Currency swap(s) <sup>(2)</sup>	\$—	\$47	\$—	\$47
Interest rate swaps	—	1,627	—	1,627
Commodity contract derivatives	—	—	98	98
Commodity derivatives under FTP <sup>(2)</sup>	—	—	—	—

Edgar Filing: Tennessee Valley Authority - Form 10-K

Swap contracts	—	27	—	27
Total	\$—	\$1,701	\$98	\$1,799

Notes

(1) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets.

(2) Due to the right of setoff and method of settlement, TVA elects to record commodity derivatives under the FTP based on its net commodity position with the counterparty or FCM. Deposits are made to TVA's margin cash accounts held with each FCM to offset any net liability positions in full for derivatives that are transacted with FCMs. TVA records currency swaps net of cash collateral received from or paid to the counterparty, to the extent such amount is not recorded in Accounts Payable and accrued liabilities. See Note 16 — Offsetting of Derivative Assets and Liabilities.

Table of Contents

## Fair Value Measurements

At September 30, 2014

Assets	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Investments				
Equity securities	\$ 162	\$—	\$—	\$ 162
Debt securities				
U.S. government corporations and agencies	46	36	—	82
Corporate debt securities	—	290	—	290
Residential mortgage-backed securities	—	14	—	14
Commercial mortgage-backed securities	—	7	—	7
Collateralized debt obligations	—	29	—	29
Institutional mutual funds	101	—	—	101
Forward debt securities contracts	—	3	—	3
Private partnerships measured at net asset value <sup>(1)</sup>	—	—	—	214
Commingled funds measured at net asset value <sup>(1)</sup>	—	—	—	1,079
Total investments	309	379	—	1,981
Currency swap(s) <sup>(2)</sup>	—	—	—	—
Commodity contract derivatives	—	—	1	1
Commodity derivatives under FTP <sup>(2)</sup>	—	—	—	—
Swap contracts	—	—	—	—
Total	\$ 309	\$ 379	\$ 1	\$ 1,982
Liabilities				
Currency swap(s) <sup>(2)</sup>	\$—	\$ 15	\$—	\$ 15
Interest rate swaps	—	1,348	—	1,348
Commodity contract derivatives	—	—	97	97
Commodity derivatives under FTP <sup>(2)</sup>	—	—	—	—
Swap contracts	—	34	—	34
Total	\$—	\$ 1,397	\$ 97	\$ 1,494

## Notes

(1) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance

sheets.

(2) Due to the right of setoff and method of settlement, TVA elects to record commodity derivatives under the FTP based on its net commodity position with the counterparty or FCM. Deposits are made to TVA's margin cash accounts held with each FCM to offset any net liability positions in full for derivatives that are transacted with FCMs. TVA records currency swaps net of any cash collateral received from or paid to the counterparty, to the extent such amount is not recorded in Accounts Payable and accrued liabilities. See Note 16 — Offsetting of Derivative Assets and Liabilities.

Table of Contents

TVA uses internal valuation specialists for the calculation of its commodity contract derivatives fair value measurements classified as Level 3. Analytical testing is performed on the change in fair value measurements each period to ensure the valuation is reasonable based on changes in general market assumptions. Significant changes to the estimated data used for unobservable inputs, in isolation or combination, may result in significant variations to the fair value measurement reported.

The following table presents a reconciliation of all commodity contract derivatives measured at fair value on a recurring basis using significant unobservable inputs (Level 3):

## Fair Value Measurements Using Significant Unobservable Inputs

	Commodity Contract Derivatives	
Balance at October 1, 2013	\$(140	)
Purchases	—	
Issuances	—	
Sales	—	
Settlements	33	
Net unrealized gains (losses) deferred as regulatory assets and liabilities	11	
Balance at September 30, 2014	(96	)
Purchases	—	
Issuances	—	
Sales	—	
Settlements	—	
Net unrealized gains (losses) deferred as regulatory assets and liabilities	(1	)
Balance at September 30, 2015	\$(97	)

The following table presents quantitative information related to the significant unobservable inputs used in the measurement of fair value of TVA's assets and liabilities classified as Level 3 in the fair value hierarchy:

## Quantitative Information about Level 3 Fair Value Measurements

	Fair Value at September 30 2015	Valuation Technique(s)	Unobservable Inputs	Range
<b>Assets</b>				
Commodity contract derivatives	1	Pricing model	Coal supply and demand Long-term market prices	0.8 - 1.0 billion tons/year \$10.64 - \$103.41/ton
<b>Liabilities</b>				
Commodity contract derivatives	98	Pricing model	Coal supply and demand Long-term market prices	0.8 - 1.0 billion tons/year \$10.64 - \$103.41/ton

Table of Contents

## Quantitative Information about Level 3 Fair Value Measurements

	Fair Value at September 30 2014	Valuation Technique(s)	Unobservable Inputs	Range	
<b>Assets</b>					
Commodity contract derivatives	\$1	Discounted cash flow	Credit risk	2 - 5 %	(1)
		Pricing model	Coal supply and demand Long-term market prices	1.0 - 1.1 billion tons/year \$11.24 - \$67.07/ton	
<b>Liabilities</b>					
Commodity contract derivatives	\$97	Pricing model	Coal supply and demand Long-term market prices	1.0 - 1.1 billion tons/year \$11.24 - \$67.07/ton	

## Note

(1) Applies to two contracts.

## Other Financial Instruments Not Recorded at Fair Value

TVA uses the methods and assumptions described below to estimate the fair value of each significant class of financial instrument. The fair value of the financial instruments held at September 30, 2015, and September 30, 2014, may not be representative of the actual gains or losses that will be recorded when these instruments mature or are called or presented for early redemption. The estimated values of TVA's financial instruments not recorded at fair value at September 30, 2015, and September 30, 2014, were as follows:

Estimated Values of Financial Instruments Not Recorded at Fair Value  
At September 30

	Valuation Classification	2015 Carrying Amount	Fair Value	2014 Carrying Amount	Fair Value
EnergyRight® receivables (including current portion)	Level 2	\$156	\$162	\$156	\$166
Loans and other long-term receivables, net (including current portion)	Level 2	\$129	\$117	\$92	\$81
EnergyRight® purchase obligation (including current portion)	Level 2	\$185	\$208	\$190	\$215
Unfunded loan commitments	Level 2	\$—	\$9	\$—	\$18
Membership interests of variable interest entity subject to mandatory redemption (including current portion)	Level 2	\$37	\$47	\$39	\$50
	Level 2	\$22,716	\$25,468	\$22,980	\$26,889

Edgar Filing: Tennessee Valley Authority - Form 10-K

Long-term outstanding power bonds (including current maturities), net

Long-term debt of variable interest entities (including current maturities)	Level 2	\$1,279	\$1,407	\$1,311	\$1,425
---	---------	---------	---------	---------	---------

Due to the short-term maturity of Cash and cash equivalents, Restricted cash and investments, and Short-term debt, net (each considered a Level 1 valuation classification), the carrying amounts of these instruments approximate their fair values.

The fair value for loans and other long-term receivables is estimated by determining the present value of future cash flows using a discount rate equal to lending rates for similar loans made to borrowers with similar credit ratings and for similar remaining maturities, where applicable.

120

---



Table of Contents

The fair value of long-term debt traded in the public market is determined by multiplying the par value of the debt by the indicative market price at the balance sheet date. The fair value of other long-term debt and membership interests of variable interest entity subject to mandatory redemption is estimated by determining the present value of future cash flows using current market rates for similar obligations, giving effect to credit ratings and remaining maturities.

## 18. Proprietary Capital

## Appropriation Investment

TVA's power program and stewardship (nonpower) programs were originally funded primarily by appropriations from Congress. In 1959, Congress passed an amendment to the TVA Act that required TVA's power program to be self-financing from power revenues and proceeds from power program financings. While TVA's power program did not directly receive appropriated funds after it became self-financing, TVA continued to receive appropriations for certain multipurpose and other nonpower mission-related activities as well as for its stewardship activities. TVA has not received any appropriations from Congress for any activities since 1999, and since that time, TVA has funded stewardship program activities primarily with power revenues.

The 1959 amendment to the TVA Act also required TVA, beginning in 1961, to make annual payments to the U.S. Treasury from net power proceeds as a repayment of and as a return on the Power Program Appropriation Investment until an additional \$1.0 billion of the Power Program Appropriation Investment has been repaid. TVA paid \$10 million for 2014 as a repayment of the Power Program Appropriation Investment. With the 2014 payment, TVA fulfilled its requirement to repay \$1.0 billion of the Power Program Appropriation Investment. The TVA Act requires TVA to continue making payments to the U.S. Treasury as a return on the remaining \$258 million of the Power Program Appropriation Investment.

The table below summarizes TVA's activities related to appropriated funds.

## Summary of Proprietary Capital Activity

At or for the years ended September 30

	2015		2014		
	Power Program	Nonpower Programs	Power Program	Nonpower Programs	
Appropriation Investment					
Balance at beginning of year	\$258	\$4,351	\$268	\$4,351	
Return of power program appropriation investment	—	—	(10	) —	
Balance at end of year	258	4,351	258	4,351	
Retained Earnings					
Balance at beginning of year	5,240	(3,750	) 4,767	(3,742	)
Net income (expense) for year	1,122	(11	) 477	(8	)
Return on power program appropriation investment	(5	) —	(4	) —	
Balance at end of year	6,357	(3,761	) 5,240	(3,750	)
Net proprietary capital at September 30	\$6,615	\$590	\$5,498	\$601	

## Payments to the U.S. Treasury

TVA paid the U.S. Treasury \$5 million in 2015, \$4 million in 2014, and \$7 million in 2013 as a return on the Power Program Appropriation Investment. The amount of the return on the Power Program Appropriation Investment is based on the Power Program Appropriation Investment balance at the beginning of that year and the computed average interest rate payable by the U.S. Treasury on its total marketable public obligations at the same date. The

interest rates payable by TVA on the Power Program Appropriation Investment were 2.04 percent, 1.97 percent, and 2.10 percent for 2015, 2014, and 2013, respectively.

Accumulated Other Comprehensive Income (Loss)

The items included in Accumulated other comprehensive income (loss) consist of market valuation adjustments for certain derivative instruments. See Note 16.

TVA records exchange rate gains and losses on debt in net income and marks its currency swap assets and liabilities to market through other comprehensive income. TVA had unrealized gains (losses) of \$(72) million and \$4 million in 2015 and 2014, respectively, on the mark-to-market of currency swaps. TVA then reclassifies an amount out of accumulated other comprehensive income into net income, offsetting the gain/loss from recording the exchange gain/loss on the debt. The amounts reclassified from other comprehensive income into net income resulted in increases (decreases) to net income of \$(65) million, \$2 million, and \$1 million in 2015, 2014, and 2013, respectively. These reclassifications, coupled with the recording of the exchange gain/loss on the debt, did not have an impact on net income in 2015, 2014, and 2013. Based on forecasted foreign currency exchange rates, TVA expects to reclassify approximately \$14 million of losses from accumulated other

Table of Contents

comprehensive income to interest expense within the next twelve months to offset amounts anticipated to be recorded in interest expense related to exchange gain on the debt.

## 19. Other Income (Expense), Net

Income and expenses not related to TVA's operating activities are summarized in the following table:

Other Income (Expense), Net

For the years ended September 30

	2015	2014	2013
Interest income	\$24	\$23	\$23
External services	12	19	18
Gains (losses) on investments	(1	) 6	4
Miscellaneous	(6	) 1	(1
Total other income (expense), net	\$29	\$49	\$44

## 20. Supplemental Cash Flow Information

Interest paid was \$1.3 billion in 2015, 2014, and 2013, respectively. These amounts differ from interest expense due to the timing of payments and interest capitalized of \$214 million in 2015, \$175 million in 2014, and \$168 million in 2013 as a part of major capital expenditures.

Construction in progress and Nuclear fuel expenditures included in Accounts payable and accrued liabilities at September 30, 2015, 2014, and 2013 were \$530 million, \$391 million, and \$270 million, respectively, and are excluded from the Statements of Consolidated Cash Flows for the years ended September 30, 2015, 2014, and 2013 as non-cash investing activities. In November 2013, in accordance with the regulated operations property, plant and equipment accounting guidance, the TVA Board approved the treatment of all amounts currently included in Construction in progress related to Bellefonte as a regulatory asset. Bellefonte amounts included in Construction expenditures for 2013 were \$162 million.

Assets acquired through capital leases of \$70 million and \$20 million for the years ended September 30, 2014 and 2013, respectively, were excluded from the Statements of Consolidated Cash Flows for the years ended September 30, 2014 and 2013 as non-cash financing activities.

Cash flows from futures contracts, forward contracts, option contracts, and swap contracts that are accounted for as hedges are classified in the same category as the item being hedged or on a basis consistent with the nature of the instrument.

## 21. Benefit Plans

TVA sponsors a qualified defined benefit pension plan that covers most of its full-time employees hired prior to July 1, 2014, a qualified defined contribution plan that covers most of its full-time employees, two unfunded post-retirement health care plans that provide for non-vested contributions toward the cost of eligible retirees' medical coverage, other postemployment benefits such as workers' compensation, and the SERP.

## Overview of Plans and Benefits

Retirement Plans. TVA sponsors a qualified defined benefit pension plan and a qualified defined contribution 401(k) plan for most of its full-time annual employees hired prior to July 1, 2014, that provides two benefit structures: the

## Edgar Filing: Tennessee Valley Authority - Form 10-K

Original Benefit Structure and the Cash Balance Benefit Structure. Eligible employees initially hired on or after January 1, 1996, must participate in the Cash Balance Benefit Structure. Employees hired after July 1, 2014, qualify for a retirement benefit as participants in the Employer Automatic Benefit Structure and will be eligible for a defined contribution benefit in the 401(k) plan only. A summary of the benefits provided by each structure is as follows:

**Original Benefit Structure.** The pension benefit for a member participating in the Original Benefit Structure is based on the member's creditable service, the member's average monthly salary for the highest three consecutive years of eligible compensation, and a pension factor based on the member's age and years of service, less a Social Security offset. In addition, TVA makes matching contributions of 25 cents on the dollar (up to 1.5 percent of eligible compensation) to the 401(k) plan for members participating in the Original Benefit Structure.

**Cash Balance Benefit Structure.** The pension benefit for a member participating in the Cash Balance Benefit Structure is based on credits accumulated in the member's account and the member's age. A member's

Table of Contents

account receives pay credits equal to six percent of his or her eligible compensation. The account also receives interest credits at a rate set at the beginning of each calendar year equal to the change in the Consumer Price Index for All Urban Consumers ("CPI-U") plus three percent, with the provision that the rate may not be less than six percent or more than ten percent. The interest crediting rate was six percent for calendar years 2015 and 2014. In addition, TVA makes matching contributions of 75 cents on the dollar (up to 4.5 percent of eligible compensation) to the 401(k) plan for members participating in the Cash Balance Benefit Structure.

Employer Automatic Benefit Structure. Members participating in the Employer Automatic Benefit Structure receive an automatic, non-elective contribution by TVA to the 401(k) plan equal to 4.5 percent of eligible compensation and matching contributions by TVA to the 401(k) plan of 75 cents on the dollar (up to 4.5 percent of eligible compensation).

There are two investment funds within the defined benefit pension plan: the Fixed Benefit Fund and the Variable Fund. TVA's plan contributions are deposited in the Fixed Benefit Fund. Eligible employees in the Original Benefit Structure and Cash Balance Benefit Structure are allowed to make voluntary contributions to either the Variable Fund, the Fixed Fund within the Fixed Benefit Fund, or both. Employee contributions are limited to \$10,000 per year per eligible employee. The pension plan pays interest at the lesser of six percent or the actuarial assumed rate of return less 0.5 percent to employees in the Fixed Fund. Employee contributions in the Fixed Fund were credited an annual rate of interest of six percent during 2015 and 2014, resulting in credit amounts of \$26 million and \$33 million, respectively. Employee contributions to the Variable Fund are invested in an S&P 500 Stock Index Fund.

The defined benefit pension plan and the defined contribution 401(k) plan are administered by a separate legal entity, TVARS, which is governed by its own board of directors (the "TVARS Board"). Upon notification by the TVARS Board of the minimum required and recommended contributions, TVA determines the level of contribution to make to TVARS to fund the defined benefit pension plan for the upcoming fiscal year.

Members of both the Original Benefit Structure and the Cash Balance Benefit Structure can also become eligible for a supplemental pension benefit based on age and years of service at retirement, which is designed to help offset the cost of retiree medical insurance.

401(k) Plan Contributions. TVA made non-elective and matching contributions of approximately \$36 million to the plan during 2015, \$35 million during 2014, and \$34 million during 2013.

Supplemental Executive Retirement Plan. TVA has established a SERP for certain executives in critical positions to provide supplemental pension benefits tied to compensation that exceeds limits imposed by IRS rules applicable to the qualified defined benefit pension plan. TVA has historically funded the annual calculated expense.

Other Post-Retirement Benefits. TVA sponsors two unfunded post-retirement benefit plans that provide for non-vested contributions toward the cost of certain eligible retirees' medical coverage. The first plan covers only certain retirees and surviving dependents who do not qualify for TVARS benefits, including the supplemental pension benefit. The second plan is designed to place a limit on the out-of-pocket amount certain eligible retirees pay for medical coverage and provides a credit based on years of TVA service and monthly base pension amount, reduced by any TVARS supplemental pension benefits or any TVA contribution from the first plan, described above.

Other Post-Employment Benefits. TVA employees injured in work-related incidents are covered by the workers' compensation program for federal employees administered through the Department of Labor by the Office of Workers' Compensation Programs in accordance with the provisions of FECA. FECA provides compensation and medical benefits to federal employees for permanent and temporary disability due to employment-related injury or disease.

Accounting Mechanisms

Regulatory Accounting. TVA has classified all amounts related to unrecognized prior service costs, net actuarial gains or losses, and the funded status as regulatory assets as such amounts are probable of collection in future rates. On October 1, 2014, TVA began recognizing pension costs as regulatory assets to the extent that the amount calculated under GAAP as pension expense differs from the amount TVA contributes to the pension plan.

Cost Method. TVA uses the projected unit credit cost method to determine the service cost and the projected benefit obligation for retirement, termination, and ancillary benefits. Under this method, a “projected accrued benefit” is calculated at the beginning of the year and at the end of the year for each benefit that may be payable in the future. The “projected accrued benefit” is based on the plan’s accrual formula and upon service at the beginning or end of the year, but it uses final average compensation, social security benefits, and other relevant factors projected to the age at which the employee is assumed to leave active service. The projected benefit obligation is the actuarial present value of the “projected accrued benefits” at the beginning of the year for employed participants and is the actuarial present value of all benefits for other participants. The

Table of Contents

service cost is the actuarial present value of the difference between the “projected accrued benefits” at the beginning and end of the year.

Amortization of Net Gain or Loss. TVA utilizes the corridor approach for gain/loss amortization. Differences between actuarial assumptions and actual plan results are deferred and amortized into periodic cost only when the accumulated differences exceed 10 percent of the greater of the projected benefit obligation or the market-related value of plan assets. If necessary, the excess is amortized over the average remaining service period of active employees.

Asset Method. TVA recognizes the impact of asset performance on pension expense over a three-year phase-in period through a “market-related” value of assets calculation. Since the “market-related” value of assets recognizes investment gains and losses over a three-year period, the future value of assets will be impacted as previously deferred gains or losses are recognized. The “market-related” value is used in calculating expected return on plan assets and net gain or loss for pension cost determination.

## Obligations and Funded Status

The changes in plan obligations, assets, and funded status for the years ended September 30, 2015 and 2014, were as follows:

## Obligations and Funded Status

For the years ended September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2015	2014	2015	2014
Change in benefit obligation				
Benefit obligation at beginning of year	\$ 12,265	\$ 11,471	\$ 652	\$ 656
Service cost	130	130	16	18
Interest cost	540	558	29	32
Plan participants' contributions	25	28	—	—
Collections <sup>(1)</sup>	—	—	94	93
Amendments	—	2	—	—
Actuarial loss (gain)	556	722	3	(21)
Net transfers from variable fund/401(k) plan 11		13	—	—
Expenses paid	(6)	(6)	—	—
Benefits paid	(697)	(653)	(137)	(126)
Benefit obligation at end of year	12,824	12,265	657	652
Change in plan assets				
Fair value of net plan assets at beginning of year	7,507	7,221	—	—
Actual return on plan assets	(325)	648	—	—
Plan participants' contributions	25	28	—	—
Collections <sup>(1)</sup>	—	—	94	93
Net transfers from variable fund/401(k) plan 11		13	—	—
Employer contributions <sup>(2)</sup>	282	256	43	33
Expenses paid	(6)	(6)	—	—
Benefits paid	(697)	(653)	(137)	(126)
Fair value of net plan assets at end of year	6,797	7,507	—	—
Funded status	\$(6,027)	\$(4,758)	\$(657)	\$(652)

Notes

(1) Collections include retiree contributions as well as federal reinsurance payments and provider discounts and rebates.

(2) Other Post-Retirement Benefits Employer contributions are reduced by federal reinsurance payments and provider discounts and rebates.

The \$556 million pension actuarial loss for 2015 is primarily due to the change in the mortality assumption, which increased the projected benefit obligation by \$518 million. Additional losses of \$349 million were due to demographic



Table of Contents

experience from the impact of TVA's organization restructuring in 2014 and 2015 and assumptions on the forms of benefit payment elections. These losses were partially offset by assumption changes for the COLA of \$232 million reflecting a slower than anticipated economic recovery and increasing the discount rate from 4.45 percent to 4.50 percent which decreased the liability by \$79 million. The discount rate increased primarily due to the longer expected duration as a result of the new mortality assumption.

The pension actuarial loss for 2014 primarily reflects the impact of the decrease in the discount rate from 5.00 percent to 4.45 percent, which increased the liability by approximately \$729 million. Additional losses were due to demographic experience from the impact of TVA's organizational restructuring in 2014. This increased the projected benefit obligation by \$36 million. These losses were partially offset by the \$88 million gain from the change in the retirement rates assumptions based on a five-year experience study.

The other post-retirement actuarial loss for 2015 is due primarily to an updated mortality assumption resulting in a longer expected duration of benefit payments which increased the liability by \$21 million and actuarial losses of \$20 million due to demographic experience, including assumption changes. These losses were partially offset by assumption changes for updated per capita claims costs and retiree contributions of \$30 million to reflect observed and anticipated plan experience. Additionally, the discount rate increased from 4.50 percent to 4.65 percent decreasing the liability by \$13 million. The discount rate increased primarily due to the longer expected duration as a result of the new mortality assumption.

The other post-retirement actuarial gain for 2014 was primarily due to demographic experience related to updated per capita claims costs and retiree contributions, which decreased the liability by \$64 million. The change in the retirement rates assumptions provided an additional gain of \$16 million. These gains were partially offset by the decrease in the discount rate from 5.05 percent to 4.50 percent and the reduction in force impact, which increased the liability by \$43 million and \$17 million, respectively.

Amounts related to these benefit plans recognized on TVA's consolidated balance sheets consist of regulatory assets that have not been recognized as components of net periodic benefit cost at September 30, 2015 and 2014, and the funded status of TVA's benefit plans, which are included in Accounts payable and accrued liabilities and Post-retirement and post-employment benefit obligations:

Amounts Recognized on TVA's Consolidated Balance Sheets

At September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2015	2014	2015	2014
Regulatory assets	\$5,425	\$4,157	\$140	\$140
Accounts payable and accrued liabilities	(6	) (5	) (37	) (38
Pension and post-retirement benefit obligations <sup>(1)</sup>	(6,021	) (4,753	) (620	) (614

Note

(1) Table above excludes \$465 million and \$472 million of post-employment benefit costs that are recorded in post-retirement and post-employment benefit obligations on the Consolidated Balance Sheets at September 30, 2015 and 2014, respectively.

Unrecognized amounts included in regulatory assets yet to be recognized as components of accrued benefit cost at September 30 consisted of:

Post-Retirement Benefit Costs Deferred as Regulatory Assets

At September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2015	2014	2015	2014

Edgar Filing: Tennessee Valley Authority - Form 10-K

Unrecognized prior service credit	\$(158	) \$(180	) \$(33	) \$(39	)
Unrecognized net loss	5,355	4,337	173	179	
Amount capitalized due to actions of regulator	228	—	—	—	
Total regulatory assets	\$5,425	\$4,157	\$140	\$140	

125

---

Table of Contents

The projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plan at September 30, 2015, and 2014, were as follows:

Projected Benefit Obligations and Accumulated Benefit Obligations in Excess of Plan Assets

At September 30

	2015	2014
Projected benefit obligation	\$12,824	\$12,265
Accumulated benefit obligation	12,626	12,039
Fair value of net plan assets	6,797	7,507

The components of net periodic benefit cost and other amounts recognized as changes in regulatory assets for the years ended September 30, 2015, and 2014, were as follows:

Components of Net Periodic Benefit Cost

For the years ended September 30

	Pension Benefits			Other Post-Retirement Benefits		
	2015	2014	2013	2015	2014	2013
Service cost	\$130	\$130	\$154	\$16	\$18	\$24
Interest cost	540	558	468	29	32	31
Expected return on plan assets	(437 )	(435 )	(428 )	—	—	—
Amortization of prior service credit	(21 )	(21 )	(22 )	(6 )	(6 )	(6 )
Recognized net actuarial loss	299	285	377	9	11	25
Total net periodic benefit cost as actuarially determined	511	517	549	48	55	74
Amount capitalized due to actions of regulator	(228 )	—	—	—	—	—
Total net period benefit cost	\$283	\$517	\$549	\$48	\$55	\$74

The amounts in the regulatory asset that are expected to be recognized as components of net periodic benefit cost during the next fiscal year are as follows:

Expected Amortization of Regulatory Assets in 2016

At September 30, 2015

	Pension Benefits	Other Post-Retirement Benefits	Total
Prior service credit	\$(23 )	\$(6 )	\$(29 )
Net actuarial loss	291	8	299

The amount in the pension net component benefit costs expected to be capitalized due to actions of regulator in the next fiscal year is \$231 million.

Plan Assumptions

TVA's reported costs of providing the plan benefits are impacted by numerous factors including the provisions of the plans, changing employee demographics, and various assumptions, the most significant of which are noted below.

Table of Contents

## Actuarial Assumptions

At September 30

	Pension Benefits		Other Post-Retirement Benefits		
	2015	2014	2015	2014	
Assumptions utilized to determine benefit obligations at September 30					
Discount rate	4.50	% 4.45	% 4.65	% 4.50	%
Rate of compensation increase	5.70	% 5.70	% N/A	N/A	
Initial health care cost trend rate	N/A	N/A	7.00	% 7.50	%
Ultimate health care cost trend rate	N/A	N/A	5.00	% 5.00	%
Ultimate trend rate is reached in year beginning	N/A	N/A	2019	2019	
Assumptions utilized to determine net periodic benefit cost for the years ended September 30					
Discount rate	4.45	% 5.00	% 4.50	% 5.05	%
Expected return on plan assets	7.00	% 7.25	% N/A	N/A	
Rate of compensation increase	5.70	% 5.72	% N/A	N/A	
Initial health care cost trend rate	N/A	N/A	7.50	% 8.00	%
Ultimate health care cost trend rate	N/A	N/A	5.00	% 5.00	%
Ultimate trend rate is reached in year beginning	N/A	N/A	2019	2019	

**Discount Rate.** In selecting the assumed discount rate, TVA reviews market yields on high-quality corporate debt and long-term obligations of the U.S. Treasury and endeavors to match, through the use of a hypothetical bond portfolio, instrument maturities with the maturities of its pension obligations in accordance with the prevailing accounting standards. The selected bond portfolio is derived from a universe of high quality corporate bonds of Aa-rated quality or higher. After the bond portfolio is selected, a single interest rate is determined that equates the present value of the plan's projected benefit payments discounted at this rate with the market value of the bonds selected. Based on recent market trends and due to the updated mortality assumption resulting in a slightly longer duration of benefits, TVA increased its discount rate used to determine the pension benefit obligation and other post-retirement benefit obligation. At September 30, 2015, the discount rates used to determine the pension and other post-retirement benefit obligations for 2015 were 4.50 percent and 4.65 percent, respectively. At September 30, 2014, the discount rates used to determine the pension and other post-retirement benefit obligations were 4.45 percent and 4.50 percent, respectively. The discount rate assumptions used to determine the obligations at year-end are used to determine the net periodic benefit costs for the following year.

**Rate of Return.** The qualified defined benefit pension plan is the only plan that is funded with qualified plan assets. In determining its expected long-term rate of return on pension plan assets, TVA uses a process that incorporates actual historical asset class returns and an assessment of expected future performance and takes into consideration external actuarial advice and asset class factors. Asset allocations are periodically updated using the pension plan asset/liability studies, and are part of the determination of the estimates of long-term rates of return. The current asset allocation policy approved by the TVARS Board diversifies plan assets across multiple asset classes so as to minimize the risk of large losses. The asset allocation policy is designed to be dynamic in nature and responsive to change in the funded status of TVARS. Changes in the expected return rates are based on annual studies performed by third party professional investment consultants. Considering there were no changes to the asset allocation policy and after reviewing the 2015 annual study and the current outlook on capital markets, TVA management decided to maintain

the expected return on assets at 7.00 percent, which will be used to measure 2016 net periodic benefit cost. TVA used an expected rate of return of 7.00 percent to measure benefit costs in 2015 and used 7.25 percent to measure benefit costs in 2014 and 2013.

**Compensation Increases.** Assumptions related to compensation increases are based on the results obtained from an actual company experience study performed during the most recent five years for plan participants. TVA obtained an updated study in 2013 and determined that future compensation would likely increase at rates between 3.50 percent and 13.00 percent per year, depending upon the employee's age. Based upon the current active participants, the average assumed compensation increase used to determine benefit obligations for 2015 and 2014 was 5.70 percent. The average assumed compensation increases used to determine net periodic pension benefit costs for 2015, 2014, and 2013 were 5.70 percent, 5.72 percent, and 4.44 percent, respectively.

**Mortality.** Mortality assumptions are based upon actuarial projections in combination with actuarial studies of the actual mortality experience of TVA's pension and post-retirement plan participants. Based upon a review of the 2013 actuarial experience study, TVA adopted the Society of Actuaries ("SOA") RP-2000 base table projected with a modified improvement scale for purposes of measuring its pension and other post-retirement benefits as of September 30, 2013. In 2014, the SOA released a new base table (RP-2014) and improvement scale (MP-2014). However, based upon analysis of the 2014 actuarial

Table of Contents

experience study, the results indicated that mortality experience remained in line with the assumptions adopted in 2013. Therefore, TVA retained its 2013 mortality assumptions for purposes of measuring its pension and other post-retirement benefit obligations at September 30, 2014. The actuarial experience study was further updated in 2015. Based on analysis of the 2015 study, the 2014 SOA study of mortality tables, and recent additional studies of mortality improvement that was updated by the SOA in October 2015 (MP-2015), TVA has adopted an adjusted version of the SOA's new RP-2014 mortality tables and a modified MP-2014 improvement scale for purposes of measuring its pension and other post-retirement benefit obligations at September 30, 2015.

**Health Care Cost Trends.** TVA reviews actual recent cost trends and projected future trends in establishing health care cost trend rates. The assumed health care trend rates used to determine post-retirement benefit obligations for 2015 and 2014 were 7.00 percent and 7.50 percent, respectively. The 2015 health care cost trend rate of 7.00 percent used to determine post-retirement benefit obligations is assumed to gradually decrease each successive year until it reaches a 5.00 percent annual increase in health care costs in the years beginning October 1, 2019, and beyond. The assumed health care cost trend rates used to determine the net periodic post-retirement cost were 7.50 percent for 2015, 8.00 percent for 2014, and 8.50 percent for 2013. TVA plans to use 7.00 percent in the determination of 2016 net periodic post-retirement cost. The current trend rate assumption reflects review of TVA medical claims, slight expected increases in premiums for 2016, and more participants moving to the high deductible plan.

**Cost of Living Adjustment.** COLAs are an increase in the benefits for eligible retirees to help maintain the purchasing power of benefits as consumer prices increase. Eligible retirees may receive a COLA on the base pension portion of the monthly pension benefit in January following any year in which the 12-month average CPI-U exceeded by as much as one percent the 12-month average of the CPI-U for the preceding year. The minimum COLA is one percent and the maximum is five percent. Prior to 2013, TVA had maintained a 2.50 percent COLA, but determined that a more accurate estimate would be to lower the COLA for the short-term with a gradual increase that would trend back up to the long-term expectations based upon the economic forecast and the Federal Reserve policy. As of 2015, the economy is recovering more slowly than anticipated, and the Federal Reserve has reaffirmed its intention to keep the target range for the federal funds rate at zero to 0.25 percent. As a result, TVA determined it should decrease the COLA assumption in 2016 to zero percent with an increase to 2.20 percent in 2017, followed by gradual increases in successive years until it reaches the ultimate rate of 2.40 percent in 2021.

**Sensitivity of Costs to Changes in Assumptions.** The following chart reflects the sensitivity of pension cost to changes in certain actuarial assumptions:

Sensitivity to Certain Changes in Pension Assumptions  
At September 30, 2015

Actuarial Assumption	Change in Assumption	Impact on 2015 Pension Cost	Impact on 2015 Projected Benefit Obligation
Discount rate	(0.25	) \$18	\$404
Rate of return on plan assets	(0.25	) 16	N/A

Each fluctuation above assumes that the other components of the calculation are held constant and excludes any impact for unamortized actuarial gains or losses.

The following chart reflects the sensitivity of post-retirement benefit cost to changes in the health care trend rate:  
Sensitivity to Changes in Assumed Health Care Cost Trend Rates

At September 30, 2015

	1% Increase	1% Decrease
Effect on total of service and interest cost components for the year	\$6	\$(6 )

Edgar Filing: Tennessee Valley Authority - Form 10-K

Effect on end-of-year accumulated post-retirement benefit obligation	88	(94	)
--	----	-----	---

Each fluctuation above assumes that the other components of the calculation are held constant and excludes any impact for unamortized actuarial gains or losses.

128

---

Table of Contents

## Plan Investments

The qualified defined benefit pension plan (the "Plan"), which includes the Original Benefit Structure and the Cash Balance Benefit Structure, is the only plan that includes qualified plan assets. TVARS has a long-term investment plan which contains a dynamic de-risking strategy that allocates investments to assets that better match the liability, such as long duration fixed income securities, over time as funding status targets are met. The investment asset allocation policy approved by the TVARS Board has targets of 47 percent equity including U.S., non-U.S., private, and low volatility global public equity investments, 28 percent fixed income securities, 15 percent public real assets including Treasury Inflation-Protected Securities ("TIPS"), commodities, and Master Limited Partnerships ("MLPs"), and 10 percent private real assets. The qualified pension plan assets are invested across global public equity, private equity, cash, core fixed income, long-term core fixed income, investment grade credit, high yield fixed income, emerging markets fixed income, global TIPS, commodities, MLPs, and private real assets. The TVARS asset allocation policy includes permissible deviations from these target allocations. The TVARS Board can take action, as appropriate, to rebalance the system's assets consistent with the asset allocation policy. At September 30, 2015 and 2014, the asset holdings of the system included the following:

## Asset Holdings of TVARS

At September 30

Asset Category	Target Allocation	Plan Assets at September 30		
		2015	2014	
Global equity	32	% 38	% 43	%
Private equity	10	% 5	% 5	%
Low volatility global public equity	5	% 5	% 1	%
Cash	2	% 2	% 2	%
Core fixed income	5	% 5	% 5	%
Long-term core fixed income	5	% 5	% 5	%
Investment grade credit	6	% 6	% 6	%
International emerging markets fixed income	5	% 5	% 5	%
High yield fixed income	5	% 6	% 6	%
Global TIPS	5	% 6	% 5	%
Private real assets	10	% 9	% 7	%
Commodities	5	% 4	% 4	%
MLPs	5	% 4	% 6	%
Total	100	% 100	% 100	%



Table of Contents

## Fair Value Measurements

The following table provides the fair value measurement amounts for assets held by TVARS at September 30, 2015:  
TVA Retirement System  
At September 30, 2015

	Total <sup>(1) (2)</sup>	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Equity securities	\$1,650	\$1,649	\$—	\$1
Preferred securities	36	2	34	—
Debt securities				
Corporate debt securities	1,161	—	1,149	12
Residential mortgage-backed securities	151	—	138	13
Debt securities issued by U.S. Treasury	362	362	—	—
Debt securities issued by foreign governments	294	—	281	13
Asset-backed securities	156	—	116	40
Debt securities issued by state/local governments	25	—	25	—
Commercial mortgage-backed securities	43	—	32	11
Commingled Funds measured at net asset value <sup>(3)</sup>				
Equity	642	—	—	—
Debt	654	—	—	—
Commodity	244	—	—	—
Blended	206	—	—	—
Institutional mutual funds	26	26	—	—
Cash equivalents and other short-term investments	318	—	318	—
Certificates of deposit	6	—	6	—
Private equity measured at net asset value <sup>(3)</sup>	389	—	—	—
Private real estate measured at net asset value <sup>(3)</sup>	556	—	—	—
Treasury bills, U.S. Government notes, and securities held as futures and other derivative collateral	34	21	13	—
Securities lending commingled funds	3	—	3	—
Derivatives				
Purchased options	2	—	1	1
Foreign currency forward receivable	6	—	6	—
Total Assets	\$6,964	\$2,060	\$2,122	\$91
Liabilities				

Edgar Filing: Tennessee Valley Authority - Form 10-K

Futures	17	\$17	\$—	\$—
Foreign currency forward payable	4	—	4	—
Written options	2	—	2	—
Interest rate swaps	10	—	10	—
Credit default swaps	1	—	1	—
<b>Total Liabilities</b>	<b>\$34</b>	<b>\$17</b>	<b>\$17</b>	<b>\$—</b>

Notes

(1) Excludes approximately \$130 million in net payables associated with security purchases and sales and various other payables.

(2) Excludes a \$3 million payable for collateral on loaned securities in connection with TVARS's participation in securities lending programs.

(3) In accordance with Accounting Standards Codification Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

Edgar Filing: Tennessee Valley Authority - Form 10-K

Table of Contents

The following table provides the fair value measurement amounts for assets held by TVARS at September 30, 2014:  
TVA Retirement System  
At September 30, 2014

	Total <sup>(1) (2)</sup>	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Assets</b>				
Equity securities	\$1,669	\$1,668	\$—	\$1
Preferred securities	37	5	32	—
<b>Debt securities</b>				
Corporate debt securities	1,326	—	1,304	22
Residential mortgage-backed securities	204	—	201	3
Debt securities issued by U.S. Treasury	93	93	—	—
Debt securities issued by foreign governments	225	—	218	7
Asset-backed securities	176	—	147	29
Debt securities issued by state/local governments	30	—	29	1
Commercial mortgage-backed securities	23	—	20	3
<b>Commingled funds measured at net asset value<sup>(3)</sup></b>				
Equity	1,106	—	—	—
Debt	661	—	—	—
Commodities	332	—	—	—
Blended	228	—	—	—
Institutional mutual funds	28	28	—	—
Cash equivalents and other short-term investments	464	—	464	—
Certificates of deposit	19	—	19	—
Private equity measured at net asset value <sup>(3)</sup>	481	—	—	—
Private real estate measured at net asset value <sup>(3)</sup>	435	—	—	—
Treasury bills, U.S. Government notes, and securities held as futures and other derivative collateral	35	10	25	—
Securities lending commingled funds	2	—	2	—
<b>Derivatives</b>				
Purchased options	18	—	18	—
Foreign currency forward receivable	8	—	8	—
<b>Total Assets</b>	<b>\$7,600</b>	<b>\$1,804</b>	<b>\$2,487</b>	<b>\$66</b>
<b>Liabilities</b>				
Futures	11	\$11	\$—	\$—
Foreign currency forward payable	8	—	8	—

Edgar Filing: Tennessee Valley Authority - Form 10-K

Written options	7	—	7	—
Total Liabilities	\$26	\$11	\$15	\$—

Notes

(1) Excludes approximately \$65 million in net payables associated with security purchases and sales and various other payables.

(2) Excludes a \$2 million payable for collateral on loaned securities in connection with TVARS's participation in securities lending programs.

(3) In accordance with Accounting Standards Codification Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

Table of Contents

The following table provides a reconciliation of beginning and ending balances of pension plan assets measured at fair value on a recurring basis where the determination of fair value includes significant unobservable inputs (Level 3):  
Fair Value Measurements Using Significant Unobservable Inputs

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at October 1, 2013	\$42
Net realized/unrealized gains (losses)	3
Purchases, sales, issuances, and settlements (net)	26
Transfers in and/or out of Level 3	(5 )
Balance at September 30, 2014	66
Net realized/unrealized gains (losses)	(2 )
Purchases, sales, issuances, and settlements (net)	33
Transfers in and/or out of Level 3	(6 )
Balance at September 30, 2015	\$91

The following descriptions of the valuation methods and assumptions used by the Plan to estimate the fair value of investments apply to investments held directly by the Plan. Third-party pricing vendors provide valuations for investments held by the Plan in most instances, except for commingled, private equity, and private real estate funds which are priced at net asset values established by the investment managers with possible adjustment by management to reflect estimated current fair value. In instances where pricing is determined to be based on unobservable inputs, or where liquidity restrictions exist in the case of funds valued at net asset value, a Level 3 classification has been assigned.

**Equities and Preferred Securities.** Investment securities, including common stock, mutual funds, and preferred securities listed on either a national or foreign securities exchange or traded in the over-the-counter National Market System, are generally valued each business day at the official closing price (typically the last reported sale price) on the exchange on which the security is primarily traded. If there are no current day sales, the securities are valued at their last quoted bid price. Equities and preferred securities priced by an exchange in an active market are classified as Level 1. Preferred securities classified as Level 2 may have been priced by dealer quote or using assumptions based on observable market data, such as yields on bonds from the same issuer or industry.

**Corporate Debt Securities.** Most corporate bonds are valued based upon recent bid prices or the average of recent bid and asked prices when available (Level 2 inputs) and, if not available, they are valued through matrix pricing models developed by sources considered by management to be reliable. Matrix pricing, which is a mathematical technique commonly used to price debt securities that are not actively traded, values debt securities without relying exclusively on quoted prices for the specific securities but rather by relying on the securities' relationship to other benchmark quoted securities (Level 2 inputs).

**Residential Mortgage-Backed Securities.** Residential mortgage-backed securities consist of collateralized mortgage obligations ("CMOs") and U.S. pass-through security pools related to government-sponsored enterprises ("GSE"). CMO pricing is typically based on either a volatility-driven, multidimensional, single-cash-flow stream model or an option-adjusted spread model. These models incorporate available market data such as trade information, dealer quotes, market color, spreads, bids, and offers. Pricing for GSE securities, including the Federal Home Loan Mortgage

Corporation, the Federal National Mortgage Association, and the Government National Mortgage Association, is typically based on quotes from the To Be Announced ("TBA") market, which is highly liquid with multiple electronic platforms that facilitate the execution of trading between investors and broker/dealers. Prices from the TBA market are then compared against other live data feeds as well as input obtained directly from the dealer community. Most residential mortgage-backed securities are considered to be priced using Level 2 inputs because of the nature of their market-data-based pricing models.

U.S. Treasury Securities. For U.S. Treasury securities, fair values reflect the closing price reported in the active market in which the security is traded (Level 1 inputs).

Debt Securities Issued by Foreign Governments. These include foreign government bonds and foreign government inflation-linked securities. They are typically priced based on proprietary discounted cash flow models, incorporating option-adjusted spread features as appropriate. Most debt securities issued by foreign governments are classified as Level 2 because of the nature of their market-data-based pricing models.

Table of Contents

**Asset-Backed Securities.** Asset-backed securities are typically priced based on a single cash-flow stream model, which incorporates available market data such as trade information, dealer quotes, market color, spreads, bids, and offers. Because of the market-data-based nature of such pricing models, most asset-backed securities are classified as Level 2.

**Debt Securities Issued by State and Local Governments.** Most debt securities issued by state and local governments are priced using market-data-based pricing models, and are therefore classified as Level 2. These pricing models incorporate market data such as quotes, trading levels, spread relationships, and yield curves, as applicable.

**Commercial Mortgage-Backed Securities.** Commercial mortgage-backed securities are typically priced based on a single-cash-flow stream model, which incorporates available market data such as trade information, dealer quotes, market color, spreads, bids, and offers. Because of the market-data-based nature of such pricing models, most commercial mortgage-backed securities are classified as Level 2.

**Commingled Funds.** The Plan invests in commingled funds, which include collective trusts, unit investment trusts, and similar investment funds that predominantly hold debt and/or equity securities as underlying assets. The Plan's ownership consists of a pro rata share and not a direct ownership of an underlying investment. These commingled funds are valued at their closing net asset values (or unit value) per share as reported by the managers of the commingled funds and as supported by the unit prices of actual purchase and sale transactions occurring as of or close to the financial statement date. These net asset values may be adjusted by management if it is determined that they do not reflect a current estimate of fair value. In accordance with Accounting Standards Codification Subtopic 820-10, commingled funds have not been classified in the fair value hierarchy.

The Plan is invested in equity commingled funds, which can be categorized as either passively managed index funds or actively managed funds. The equity index funds seek to track the performance of a particular index by replicating its capitalization and characteristics. Passive fund benchmark indices include the Russell 1000 index, the S&P 500 index, and the Morgan Stanley Capital International All Country World Index ex-U.S. The actively managed equity funds seek to outperform certain equity benchmarks through a combination of fundamental and technical analysis. Active funds select portfolio positions based upon their research.

The Plan is invested in actively managed debt commingled funds which seek to outperform certain fixed-income benchmarks through fundamental research and analysis. The funds invest in a diversified portfolio of fixed income securities and derivatives of varying maturities. The objective is to achieve a positive relative total return through active credit selection.

The Plan is invested in commingled funds, which invest across multiple asset classes that can be categorized as blended. These funds seek to outperform a passive benchmark through active security selection. The funds invest in securities across equity, fixed income, currency, and commodities. The portfolios employ fundamental, quantitative, and technical analysis.

The Plan is invested in commodity commingled funds, which can be categorized as actively managed funds. The funds seek to outperform certain commodity benchmarks through fundamental research and analysis. The funds invest in a diversified portfolio of commodity securities and derivatives of varying maturities. The objective is to achieve a positive relative return through active security selection.

The Plan's investments in equity, debt, blended, and commodity commingled funds can generally be redeemed at any time upon notification of the investment managers, with required notice periods varying from same-day to monthly.

**Institutional Mutual Funds.** Participation units of institutional mutual funds are stated at their quoted redemption values as reported by the investment managers based on their net asset values, which reflect the fair values of the underlying investments. These funds are traded at published net asset values in an active market (Level 1 inputs).

**Cash Collateral Held Under Securities Lending Arrangements.** Fair value has been determined to approximate the deposit account balances held in cash collateral pools (Level 2 inputs), as no discounts for credit quality or liquidity were determined to be applicable.

**Cash Equivalents and Other Short-Term Investments and Certificates of Deposit.** Cash equivalents and other short-term investments are highly liquid securities with a maturity of less than three months and 12 months, respectively. These consist primarily of discount securities such as commercial paper, repurchase agreements, U.S. Treasury bills, and certain agency securities. These securities, as well as certificates of deposit, may be priced at cost, which approximates fair value due to the short-term nature of the instruments. Model based pricing which incorporates observable inputs may also be utilized. These securities are classified as Level 2. Active market pricing may be utilized for U.S. Treasury bills, which are classified as Level 1.

**Private Equity Funds.** Private equity limited partnerships are reported at net asset values provided by the fund managers. These net asset values may be adjusted by management if it is determined that they do not reflect a current estimate of fair value. In accordance with Accounting Standards Codification Subtopic 820-10, commingled funds have not been classified in the fair value hierarchy.



Table of Contents

The private equity limited partnerships typically make longer-term investments in private companies and seek to obtain financial returns through long-term appreciation based on corporate stewardship, improved operating processes, and financial restructuring, which may involve a merger or acquisition. Significant investment strategies include venture capital; buyout; mezzanine or subordinated debt; restructuring or distressed debt; and special situations. Venture capital partnerships consist of two main groupings. Early-stage venture capital partnerships invest in businesses still in the conceptual stage where products may not be fully developed and where revenues and/or profits may be several years away. Later-stage venture capital partnerships invest in more mature companies in need of growth or expansion capital. Buyout partnerships provide the equity capital for acquisition transactions either from a private seller or the public, which may represent the purchase of the entire company or a refinancing or recapitalization transaction where equity is invested. Mezzanine or subordinated debt partnerships provide the intermediate capital between equity and senior debt in a buyout or refinancing transaction and typically own a security in the company that carries current interest payments as well as a potential equity interest in the company. Restructuring or distressed debt partnerships purchase opportunities generated by overleveraged or poorly managed companies. Special situation partnerships include organizations with a specific industry focus not covered by the other private equity subclasses or unique opportunities that fall outside the regular subclasses.

The private equity funds have no investment withdrawal provisions prior to the termination of the partnership. Partnerships generally continue 10 to 12 years after the inception of the fund. The partnerships are subject to three to four one-year extensions at the discretion of the general partner. Partnerships can generally be dissolved by an 80 percent vote in interest by all limited partners, with some funds requiring the occurrence of a specific event.

Private Real Estate Investments. The Plan's ownership in private real estate investments consists of a pro rata share and not a direct ownership of the underlying investments. The fair values of the Plan's private real estate investments are estimated utilizing net asset values provided by the investment managers. These net asset values may be adjusted by management if it is determined that they do not reflect a current estimate of fair value. In accordance with Accounting Standards Codification Subtopic 820-10, commingled funds have not been classified in the fair value hierarchy. The methodologies utilized by the investment managers to calculate their net asset values are summarized as follows:

The Plan is invested in limited partnerships that invest in real estate securities, real estate partnerships, and direct real estate properties. This includes investments in office, multifamily, industrial, and retail investment properties in the U.S. and international markets. The investment strategy focuses on distressed, opportunistic, and value-added opportunities. Partnership investments also include mortgage and/or real estate-related fixed-income instruments and related securities. Investments are diversified by property type and geographic location.

The Plan is invested in a commingled fund that develops, renovates, and re-leases real estate properties to create value. Investments are predominantly in top tier real estate markets that offer deep liquidity. Property types include residential, office, industrial, hotel, retail, and land. Properties are diversified by geographic region within the U.S. domestic market. The Plan is invested in a second commingled fund that invests primarily in core, well-leased, operating real estate properties with a focus on income generation. Investments are diversified by property type with a focus on office, industrial, apartment, and retail. Properties are diversified within the U.S. with an overweight to major market and coastal regions.

Fair value estimates of the underlying investments in these limited partnerships and commingled fund investments are primarily based upon property appraisal reports prepared by independent real estate appraisers within a reasonable amount of time following acquisition of the real estate and no less frequently than annually thereafter. The appraisals are based on one or a combination of three methodologies: cost of reproduction analysis, discounted cash flow analysis, and sales comparison analysis. Pricing for certain investments in mortgage-backed and asset-backed securities is typically based on models that incorporate observable inputs.

The Plan is invested in a private real estate investment trust formed to make direct or indirect investments in commercial timberland properties. Pricing for these types of investments is based on comprehensive appraisals that are conducted shortly after initial purchase of properties and at three-year intervals thereafter. All appraisals are conducted by third-party timberland appraisal firms. Appraisals are based on either a sales comparison analysis or a discounted cash flow analysis.

Derivatives. The Plan invests in a variety of derivative instruments. The valuation methodologies for these instruments are as follows:

Options. The Plan enters into purchased and written options. Options that are listed on either a national or foreign securities exchange are generally valued each business day at the official closing price (typically the last reported sales price) on the exchange on which the security is primarily traded. These options are classified as Level 1. Options traded over the counter and not on exchanges are priced by third-party vendors and are classified as Level 2.

Foreign currency forwards. The Plan enters into foreign currency forwards. All commitments are marked to market daily at the applicable translation rates, and any resulting unrealized gains or losses are recorded. Foreign currency forwards are priced by third-party vendors and are classified as Level 2. Foreign currency forwards are disclosed on a net position basis.

Table of Contents

Futures. The Plan enters into futures. The futures contracts are listed on either a national or foreign securities exchange and generally valued each business day at the official closing price (typically the last reported sales price) on the exchange on which the security is primarily traded. The pricing is performed by third-party vendors. Since futures are priced by an exchange in an active market, they are classified as Level 1.

Swaps. The Plan enters into various types of swaps. Credit default swaps are priced at market using models that consider cash flows, credit curves, recovery rates, and other factors. The pricing is performed by third-party vendors. Interest rate swap contracts are priced at market using forward rates derived from the swap curve, and the pricing is also performed by third-party vendors. Other swaps such as equity index swaps and variance swaps are priced by third-party vendors using market inputs such as spot rates, yield curves, and volatility. The Plan's swaps are generally classified as Level 2 based on the observable nature of their pricing inputs.

The valuation methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Cash Flows

Estimated Future Benefit Payments. The following table sets forth the estimated future benefit payments under the benefit plans.

Estimated Future Benefits Payments  
At September 30, 2015

	Pension Benefits	Other Post-Retirement Benefits
2016	\$ 741	\$ 39
2017	744	39
2018	748	39
2019	755	39
2020	764	39
2021 - 2025	3,903	178

Contributions. The minimum contribution for 2015 was \$215 million; however, TVA made a \$275 million contribution to TVARS. The 2014 minimum contribution was \$198 million; however, TVA made a \$250 million contribution to TVARS. In 2015, TVA made contributions of \$7 million to the SERP and \$44 million to the other post-retirement benefit plans. In 2014, TVA made contributions of \$6 million to the SERP and \$47 million to the other post-retirement benefit plans. TVA expects to contribute \$275 million to TVARS, \$6 million to the SERP, and \$39 million to the other post-retirement benefit plans in 2016.

Other Post-Employment Benefits

Post-employment benefit cost estimates are revised to properly reflect changes in actuarial assumptions made at the end of each year. TVA utilizes a discount rate determined by reference to the U.S. Treasury Constant Maturities corresponding to calculated average durations of TVA's future estimated post-employment claims payments. The use of a 2.05 percent discount rate resulted in the recognition of approximately \$39 million in expenses in 2015 and an unpaid benefit obligation of \$511 million at September 30, 2015. The 2015 current portion of the obligation is \$46 million and is recorded in Accounts payable and accrued liabilities. The 2015 long-term portion of \$465 million is

recorded in post-retirement and post-employment benefit obligations. The amounts in the current portion of the obligation represent the total unpaid losses and administrative fees for each year that are due one month following TVA's fiscal year-end.

The use of a 2.52 percent discount rate resulted in the recognition of approximately \$34 million in expenses in 2014 and an unpaid benefit obligation of \$520 million at September 30, 2014. The 2014 current portion of the obligation was \$48 million and is recorded in Accounts payable and accrued liabilities. The 2014 long-term portion of \$472 million was recorded in post-retirement and post-employment benefit obligations. The use of a 2.64 percent discount rate resulted in the recognition of approximately \$(8) million in expenses in 2013 and an unpaid benefit obligation of \$535 million at September 30, 2013.

The decrease in the unpaid benefit obligation when comparing 2015 to 2014 is due primarily to demographic experience gains from a decrease in loss experience and fewer claimants. These gains were partially offset by the decrease of the discount rate from 2.52 percent in 2014 to 2.05 percent in 2015. The decrease in the unpaid benefit obligation when comparing 2014 to 2013 was due primarily to demographic experience gains from a decrease in loss experience and fewer claimants.

Table of Contents

## 22. Commitments and Contingencies

## Commitments

At September 30, 2015, the amounts of contractual cash commitments maturing in each of the next five years and beyond are shown below:

## Commitments and Contingencies

## Payments due in the years ending September 30

	2016	2017	2018	2019	2020	Thereafter	Total
Membership interests of variable interest entity subject to mandatory redemption	2	2	2	2	3	26	37
Lease obligations							
Capital	13	13	13	12	12	156	219
Non-cancelable operating	44	42	32	25	25	38	206
Purchase obligations							
Power	217	226	229	235	241	3,124	4,272
Fuel	1,282	711	635	508	335	1,448	4,919
Other	262	198	193	189	173	1,830	2,845
Unfunded loan commitments	5	—	—	—	—	—	5
Payments on other financings	104	104	104	96	73	232	713
Total	\$1,929	\$1,296	\$1,208	\$1,067	\$862	\$6,854	\$13,216

In addition to the cash requirements, above, TVA has contractual obligations in the form of revenue discounts related to energy prepayments. See Note 1 — Energy Prepayment Obligations.

## Energy Prepayment Obligations

## Payments due in the years ending September 30

	2016	2017	2018	2019	2020	Thereafter	Total
Energy Prepayment Obligations	\$100	\$100	\$100	\$10	\$—	\$—	\$310

Membership Interests of VIE Subject to Mandatory Redemption. At September 30, 2015, TVA had outstanding membership interests subject to mandatory redemption (including current portion) of \$37 million issued by one of its VIEs of which it is the primary beneficiary. See Note 10.

Leases. TVA leases certain property, plant, and equipment under agreements with terms ranging from one to 38 years. Of the total obligations for TVA's capital leases, \$115 million represents the cost of financing. TVA's rental expense for operating leases was \$79 million in 2015, \$75 million in 2014, and \$71 million in 2013.

Power Purchase Obligations. TVA has contracted with various independent power producers and LPCs for additional capability to be made available to TVA. Several of these agreements have contractual minimum payments. In total, these agreements provide 1,255 MW of summer net capability. The remaining terms of the agreements range up to 17 years. TVA incurred \$230 million, \$237 million, and \$267 million of expense under power purchase agreements during 2015, 2014, and 2013, respectively. Certain power purchase obligations are accounted for as capital leases. Costs under TVA's power purchase agreements not accounted for as capital leases are included in TVA's consolidated statements of operations as purchased power expense and are expensed as incurred.

Under federal law, TVA is obligated to purchase power from qualifying facilities, cogenerators, and small power producers. As of September 30, 2015, there was a combined qualifying capacity of 882 MW from twenty-four different suppliers, from which TVA purchased power under this law. TVA's obligations to purchase power from these qualifying facilities are not included in the Commitments and Contingencies table.

TVA, along with others, contracted with the Southeastern Power Administration ("SEPA") to obtain power and energy from eight U.S. Army Corps of Engineers hydroelectric facilities on the Cumberland River system. The agreement with SEPA

## Table of Contents

can be terminated upon three years' notice, but this notice of termination may not become effective prior to June 30, 2017. The contract requires SEPA to provide TVA an annual minimum of 1,500 hours of energy for each megawatt of TVA's 405 MW allocation, and all surplus energy from the Cumberland River system. TVA's obligations under its contract with SEPA are not included in the Commitments and Contingencies table.

**Fuel Purchase Obligations.** TVA has approximately \$1.5 billion in long-term fuel purchase commitments ranging in terms of up to 5 years primarily for the purchase and transportation of coal. TVA also has approximately \$3.4 billion of long-term commitments ranging in terms of up to 15 years for the purchase of enriched uranium and fabrication of nuclear fuel assemblies.

**Other Obligations.** Other obligations of \$2.8 billion consist of contracts at September 30, 2015, for goods and services primarily related to capital projects as well as other major recurring operating costs.

**Leasebacks.** At September 30, 2015, and September 30, 2014, the outstanding leaseback obligations related to CTs and QTE were \$616 million and \$691 million, respectively. See Note 14 — Lease/Leasebacks.

## Contingencies

**Nuclear Insurance.** The Price-Anderson Act provides a layered framework of protection to compensate for losses arising from a nuclear event in the United States. For the first layer, all of the NRC nuclear plant licensees, including TVA, purchase \$375 million of nuclear liability insurance from American Nuclear Insurers for each plant with an operating license. Funds for the second layer, the Secondary Financial Program, would come from an assessment of up to \$127 million from the licensees of each of the 102 NRC licensed reactors in the United States. The assessment for any nuclear accident would be limited to \$19 million per year per unit. American Nuclear Insurers, under a contract with the NRC, administers the Secondary Financial Program. With its six licensed units, TVA could be required to pay a maximum of \$764 million per nuclear incident, but it would have to pay no more than \$114 million per incident in any one year. These potential liabilities will increase to \$133 million per year and a total of \$891 million per nuclear incident once Watts Bar Unit 2 becomes operational. When the contributions of the nuclear plant licensees are added to the insurance proceeds of \$375 million, over \$13.0 billion, including a five percent surcharge for legal expenses, would be available. Under the Price-Anderson Act, if the first two layers are exhausted, the U.S. Congress is required to take action to provide additional funds to cover the additional losses.

TVA carries property, decommissioning, and decontamination insurance of \$5.1 billion for its licensed nuclear plants, with up to \$2.1 billion available for a loss at any one site, to cover the cost of stabilizing or shutting down a reactor after an accident. Some of this insurance, which is purchased from Nuclear Electric Insurance Limited ("NEIL"), may require the payment of retrospective premiums up to a maximum of approximately \$127 million.

TVA purchases accidental outage (business interruption) insurance for TVA's nuclear sites from NEIL. In the event that an accident covered by this policy takes a nuclear unit offline or keeps a nuclear unit offline, NEIL will pay TVA, after a waiting period, an indemnity (a set dollar amount per week) up to a maximum indemnity of \$490 million per unit. This insurance policy may require the payment of retrospective premiums up to a maximum of approximately \$36 million.

**Decommissioning Costs.** TVA recognizes legal obligations associated with the future retirement of certain tangible long-lived assets related primarily to coal-fired generating plants and nuclear generating plants, hydroelectric generating plants/dams, transmission structures, and other property-related assets.

**Nuclear Decommissioning.** Provision for decommissioning costs of nuclear generating units is based on options prescribed by the NRC procedures to dismantle and decontaminate the facilities to meet the NRC criteria for license

termination. At September 30, 2015, the present value of the estimated future decommissioning cost of \$2.2 billion was included in AROs. The actual decommissioning costs may vary from the derived estimates because of, among other things, changes in current assumptions, such as the assumed dates of decommissioning, changes in regulatory requirements, changes in technology, and changes in the cost of labor, materials, and equipment. Utilities that own and operate nuclear plants are required to use different procedures in calculating nuclear decommissioning costs under GAAP than those that are used in calculating nuclear decommissioning costs when reporting to the NRC. The two sets of procedures produce different estimates for the costs of decommissioning primarily because of the difference in the discount rates used to calculate the present value of decommissioning costs.

TVA maintains a NDT to provide funding for the ultimate decommissioning of its nuclear power plants. TVA monitors the value of its NDT and believes that, over the long term and before cessation of nuclear plant operations and commencement of decommissioning activities, adequate funds from investments will be available to support decommissioning. TVA's operating nuclear power units are licensed through 2033 - 2041, depending on the unit. It may be possible to extend the operating life of some of the units with approval from the NRC. The balance in the NDT was \$1.5 billion at September 30, 2015. See Note 9 — Nuclear Decommissioning Costs and Note 13.

Non-Nuclear Decommissioning. The present value of the estimated future non-nuclear decommissioning cost ARO was \$1.7 billion at September 30, 2015. This decommissioning cost estimate involves estimating the amount and timing of future expenditures and making judgments concerning whether or not such costs are considered a legal obligation. Estimating



## Table of Contents

the amount and timing of future expenditures includes, among other things, making projections of the timing and duration of the asset retirement process and how costs will escalate with inflation. The actual decommissioning costs may vary from the derived estimates because of changes in current assumptions, such as the assumed dates of decommissioning, changes in regulatory requirements, changes in technology, and changes in the cost of labor, materials, and equipment.

TVA maintains an ART to help fund the ultimate decommissioning of its power assets. Estimates involved in determining if additional funding will be made to the ART include inflation rate and rate of return projections on the fund investments. The balance in the ART was \$435 million at September 30, 2015. See Note 9 — Non-Nuclear Decommissioning Costs and Note 13.

**Environmental Matters.** TVA's power generation activities, like those across the utility industry and in other industrial sectors, are subject to most federal, state, and local environmental laws and regulations. Major areas of regulation affecting TVA's activities include air quality control, water quality control, and management and disposal of solid and hazardous wastes. In the future, regulations in all of these areas are expected to become more stringent. Regulations are also expected to apply to new emissions and sources, with a particular emphasis on climate change, renewable generation, and energy efficiency.

TVA has incurred, and expects to continue to incur, substantial capital and operating and maintenance costs to comply with evolving environmental requirements primarily associated with, but not limited to, the operation of TVA's coal-fired generating units. It is virtually certain that environmental requirements placed on the operation of TVA's coal-fired and other generating units will continue to become more restrictive and potentially apply to new emissions and sources. Litigation over emissions or discharges from coal-fired generating units is also occurring, including litigation against TVA. Failure to comply with environmental laws can result in TVA being subject to enforcement actions, which can lead to the imposition of significant civil liability, including fines and penalties, criminal sanctions, and/or the shutting down of non-compliant facilities.

From the 1970s to 2015, TVA spent approximately \$6.2 billion to reduce emissions from its power plants, including \$315 million, \$378 million, and \$197 million in 2015, 2014, and 2013, respectively, on clean air controls. TVA estimates that compliance with future Clean Air Act ("CAA") requirements (excluding greenhouse gas ("GHG") requirements) could lead to additional costs of \$750 million from 2016 to 2025 for additional clean air controls. There could be additional material costs if reductions of GHGs, including carbon dioxide, are mandated under the CAA or by legislation or regulation, or if future legislative, regulatory, or judicial actions lead to more stringent emission reduction requirements for conventional pollutants. These costs cannot reasonably be predicted at this time because of the uncertainty of such potential actions.

Liability for releases and cleanup of hazardous substances is primarily regulated by the federal Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), and other federal and parallel state statutes. In a manner similar to many other industries and power systems, TVA has generated or used hazardous substances over the years.

TVA is aware of alleged hazardous-substance releases at certain non-TVA areas in connection with which other potentially responsible parties may seek monetary damages from TVA. There is information indicating that TVA sent a small amount of equipment to Ward Transformer ("Ward"), a non-TVA site in Raleigh, North Carolina. The site is contaminated by PCBs from electrical equipment due to Ward's practice of draining such equipment. A working group of potentially responsible parties is cleaning up on-site contamination in accordance with an agreement with the EPA. The cleanup effort has been divided into multiple phases, including on-site and downstream cleanup activities, two phases of soil cleanup, supplemental groundwater remediation, and cleanup of off-site contamination in the downstream drainage basin. TVA settled its potential liability for the on-site removal action for \$300 thousand and

has agreed to pay approximately \$8 thousand to settle its potential liability in connection with an EPA study of the site. TVA believes that its liability for the remaining cleanup activities as well as any natural resource damages will be less than \$1 million.

TVA operations at some TVA facilities have resulted in contamination, including coal ash, that TVA is addressing. At September 30, 2015 and 2014, TVA's estimated liability for cleanup and similar environmental work for those sites for which sufficient information is available to develop a cost estimate (primarily the TVA sites) was approximately \$23 million and \$15 million, respectively, on a non-discounted basis, and was included in Accounts payable and accrued liabilities and Other long-term liabilities on the Consolidated Balance Sheets.

#### Legal Proceedings

From time to time, TVA is party to or otherwise involved in lawsuits, claims, proceedings, investigations, and other legal matters ("Legal Proceedings") that have arisen in the ordinary course of conducting TVA's activities, as a result of a catastrophic event or otherwise.

General. At September 30, 2015, TVA had accrued \$115 million of probable losses with respect to Legal Proceedings. Of the accrued amount, \$55 million is included in Other long-term liabilities and \$60 million is included in Accounts payable and accrued liabilities. TVA is currently unable to estimate any amount or any range of amounts of reasonably possible losses, and no assurance can be given that TVA will not be subject to significant additional claims and liabilities. If actual

Table of Contents

liabilities significantly exceed the estimates made, TVA's results of operations, liquidity, and financial condition could be materially adversely affected.

Environmental Agreements. In April 2011, TVA entered into two substantively similar agreements, one with the EPA and the other with Alabama, Kentucky, North Carolina, Tennessee, and three environmental advocacy groups: the Sierra Club, the National Parks Conservation Association, and Our Children's Earth Foundation (collectively, the "Environmental Agreements"). They became effective in June 2011. Under the Environmental Agreements, TVA committed to (1) retire on a phased schedule 18 coal-fired units with a combined summer net dependable capability of 2,200 MW, (2) control, convert, or retire additional coal-fired units with a combined summer net dependable capability of 3,500 MW, (3) comply with annual, declining emission caps for SO<sub>2</sub> and NO<sub>x</sub>, (4) invest \$290 million in certain TVA environmental projects, (5) provide \$60 million to Alabama, Kentucky, North Carolina, and Tennessee to fund environmental projects, and (6) pay civil penalties of \$10 million. In exchange for these commitments, most past claims against TVA based on alleged New Source Review and associated violations were waived and cannot be brought against TVA. Future claims including those for sulfuric acid mist and GHG emissions can still be brought against TVA, and claims for increases in particulates can also be pursued at many of TVA's coal-fired units. Additionally, the Environmental Agreements do not address compliance with new laws and regulations or the cost associated with such compliance.

The liabilities related to the Environmental Agreements are included in Accounts payable and accrued liabilities and Other long-term liabilities on the September 30, 2015 Consolidated Balance Sheet. In conjunction with the approval of the Environmental Agreements, the TVA Board determined that it was appropriate to record TVA's obligations under the Environmental Agreements as regulatory assets, and they are included as such on the September 30, 2015 Consolidated Balance Sheet and will be recovered in rates in future periods.

Several legal and administrative clean air proceedings have already been terminated in connection with the Environmental Agreements. Additionally, the proceeding discussed below involving the John Sevier CAA permit is expected to be narrowed in scope or terminated since TVA has now retired all four of the John Sevier coal-fired units.

Legal Proceedings Related to the Kingston Ash Spill. Seventy-eight lawsuits based on the Kingston ash spill were filed in the United States District Court for the Eastern District of Tennessee. Fifteen of these lawsuits were dismissed. On August 4, 2014, the court issued an agreed order that implements a mediated global resolution of pending claims. Under the order, the 63 pending cases were dismissed with prejudice, and TVA deposited \$28 million with the court, which is responsible for disbursing the funds. The order anticipates that further legal proceedings will be required to resolve the claims of nine of the plaintiffs, and a portion of the \$28 million was set aside under the order to cover the anticipated costs of resolving these claims. Claims of seven of the nine plaintiffs have been resolved. In April 2015, the court dismissed the claims of the remaining two plaintiffs, and these plaintiffs did not appeal the dismissal of their claims.

Civil Penalty and Natural Resource Damages for the Kingston Ash Spill. In June 2010, TDEC issued a civil penalty order of approximately \$12 million to TVA for the Kingston ash spill, citing violations of the Tennessee Solid Waste Disposal Act and the Tennessee Water Quality Control Act. Of the \$12 million, TVA initially paid \$10 million, and agreed to undertake environmental projects valued at \$2 million as a credit against the remaining penalty amount. TVA completed several of those projects and paid TDEC the small remaining difference rather than do more projects. In addition, TVA paid \$750 thousand over three years into the Natural Resource Restoration Fund associated with the Kingston spill. In July 2015, TDEC, TVA and the United States Department of the Interior entered into an administrative order on consent which determined that TVA's restoration activities were the appropriate measures to remedy any natural resource damages and released TVA from any claims for such damages.

Case Involving Tennessee Valley Authority Retirement System. In March 2010, eight current and former participants in and beneficiaries of TVARS filed suit in the United States District Court for the Middle District of Tennessee challenging the TVARS Board's 2009 decision to make changes to the TVARS Rules and Regulations ("Rules") in exchange for a \$1 billion contribution from TVA. The changes approved by the TVARS Board (1) suspended the TVA contribution requirements for 2010 through 2013, (2) reduced the calculation for COLA benefits for CY 2010 through CY 2013, (3) reduced the interest crediting rate for the fixed fund accounts, and (4) increased the eligibility age to receive COLAs from age 55 to 60. The plaintiffs alleged that these changes violated their constitutional rights (due process, equal protection, and property rights), violated the Administrative Procedure Act, and breached statutory duties owed to the plaintiffs. TVA and plaintiffs filed cross motions for summary judgment. In August 2015, the court granted TVA's motion for summary judgment and dismissed the case with prejudice. In September 2015, the plaintiffs appealed this decision to the United States Court of Appeals for the Sixth Circuit (the "Sixth Circuit").

Cases Involving Gallatin Fossil Plant CCR Facilities. In January 2015, the State of Tennessee filed a lawsuit against TVA in the Chancery Court for Davidson County, Tennessee. The lawsuit alleges that waste materials have been released into waters of the state from coal combustion residual ("CCR") facilities at Gallatin Fossil Plant ("Gallatin") in violation of the Tennessee Water Quality Control Act and the Tennessee Solid Waste Disposal Act. TDEC is seeking injunctive relief as well as civil penalties of up to \$17,000 per day for each day TVA is found to have violated the statutes. In February 2015, the court issued an order allowing the Tennessee Scenic Rivers Association ("TSRA") and the Tennessee Clean Water Network ("TCWN") to intervene in the case. In April 2015, TSRA and TCWN filed a lawsuit against TVA in the United States District Court for the

Table of Contents

Middle District of Tennessee alleging that waste materials have been released into the Cumberland River from CCR facilities at Gallatin in violation of the Clean Water Act. The plaintiffs are seeking injunctive relief and civil penalties of up to \$37,500 per violation per day.

Case Involving the NRC Waste Confidence Decision on Spent Nuclear Fuel Storage. In June 2012, the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") vacated the NRC's updated Waste Confidence Decision ("WCD"). The WCD is a generic determination by the NRC that spent nuclear fuel can be safely managed until a permanent off-site repository is established; this determination has been a key component of the NRC licensing activities since 1984. In August 2014, the NRC issued its final rule on continued storage of spent nuclear fuel (the "Continued Storage Rule"), which replaced the WCD. Several petitions for review were filed in October 2014 in the D.C. Circuit challenging the Continued Storage Rule.

Administrative Proceeding Regarding Renewal of Operating License for Sequoyah Nuclear Plant. In May 2013, the Blue Ridge Environmental Defense League ("BREDL"), the Bellefonte Efficiency and Sustainability Team ("BEST"), and Mothers Against Tennessee River Radiation filed a petition with the NRC opposing the renewal of the operating license for Sequoyah Units 1 and 2. The petition contained eight specific contentions challenging the adequacy of the license renewal application that TVA submitted to the NRC in January 2013. TVA filed a response with the ASLB opposing the admission of all eight of the petitioners' contentions. In July 2013, the ASLB concluded that BREDL was the only one of the three petitioners that had standing to intervene in this proceeding. The ASLB also held that seven of the contentions were inadmissible, and held one portion of the remaining contention related to the WCD in abeyance pending further direction from the NRC. In September 2014, the ASLB denied BREDL's contention related to the WCD. In March 2015, the ASLB issued an order terminating the administrative proceeding. In April 2015, BREDL filed motions with the NRC to reopen the record and to admit a new contention arguing that the environmental impact statement for Sequoyah must incorporate by reference the generic environmental impact statement released in connection with the Continued Storage Rule. The NRC rejected these motions in June 2015. In August 2015, BREDL asked the D.C. Circuit to review the NRC's decision after the court issues a decision on BREDL's petition for review challenging the Continued Storage Rule. The NRC issued the license renewal of the facility operating licenses for both units, effective on September 28, 2015.

Administrative Proceedings Regarding Bellefonte Units 3 and 4. TVA submitted its combined construction and operating license ("COL") for two Advanced Passive 1000 reactors at Bellefonte Units 3 and 4 to the NRC in October 2007. In June 2008, BEST, BREDL, and Southern Alliance for Clean Energy ("SACE") submitted a joint petition for intervention and a request for a hearing. The ASLB denied standing to BEST and admitted four of the 20 contentions submitted by BREDL and SACE. The NRC reversed the ASLB's decision to admit two of the four contentions, leaving only two contentions (concerning the estimated costs of the new nuclear plant and the impact of the facility's operations on aquatic ecology) to be litigated in a future hearing. In January 2012, TVA notified the ASLB that the NRC had placed the COL in "suspended" status indefinitely at TVA's request, and TVA requested that the ASLB hold the proceeding in abeyance pending a decision by TVA regarding the best path forward with regards to the COL. In April 2012, the ASLB issued an order maintaining the proceeding in "active" status, but amending the disclosure schedule.

In July 2012, BREDL petitioned for the admission of another new, late-filed contention stemming from the D.C. Circuit's order vacating the WCD. In September 2014, the ASLB denied BREDL's request to file the new contention. Following the publication of the Continued Storage Rule, BREDL filed a petition with the NRC seeking suspension of the issuance of a final decision in the Bellefonte Units 3 and 4 proceeding and a motion with the ASLB seeking leave to file a new, late-filed contention stemming from the Continued Storage Rule. The NRC rejected this petition in February 2015. See Case Involving the NRC Waste Confidence Decision on Spent Nuclear Fuel Storage above.

Administrative Proceedings Regarding Watts Bar Unit 2. In July 2012, SACE petitioned for the admission of a late-filed contention, similar to the one filed in the Bellefonte Units 3 and 4 proceeding, stemming from the D.C. Circuit's order vacating the WCD. In September 2014, the ASLB denied SACE's request to file the contention related to the WCD and terminated the proceeding. Following the publication of the Continued Storage Rule, SACE filed a petition with the NRC seeking suspension of the issuance of a final decision in the Watts Bar Unit 2 proceeding and motions with the ASLB to reopen the record and for leave to file a new, late-filed contention stemming from the Continued Storage Rule. The NRC rejected this petition in February 2015. In addition, in February 2015, SACE filed motions with the NRC to reopen the record and to admit a new contention relating to the expedited seismic evaluation process report for Watts Bar that TVA filed with the NRC in December 2014 as part of the Fukushima lessons-learned review process. These motions were denied in April 2015, and SACE appealed this decision to the NRC in May 2015. The NRC denied this appeal in September 2015.

In April 2015, SACE filed motions with the NRC to reopen the record and to admit a new contention arguing that the environmental impact statement for Watts Bar Unit 2 must incorporate by reference the generic environmental impact statement released in connection with the Continued Storage Rule. The NRC rejected these motions in June 2015. The proceeding remains closed. The NRC issued the operating license for Watts Bar Unit 2 in October 2015.

John Sevier Fossil Plant Clean Air Act Permit. In September 2010, the Environmental Integrity Project, the Southern Environmental Law Center, and the Tennessee Environmental Council filed a petition with the EPA, requesting that the EPA Administrator object to the CAA permit issued to TVA for operation of John Sevier. Among other things, the petitioners allege that repair, maintenance, or replacement activities undertaken at John Sevier Unit 3 in 1986 triggered the Prevention of

Table of Contents

Significant Deterioration ("PSD") requirements for SO<sub>2</sub> and NO<sub>x</sub>. The CAA permit, issued by TDEC, remains in effect pending the disposition of the petition. TVA has now retired all four John Sevier coal-fired units, and this challenge likely will not proceed.

National Environmental Policy Act Challenge at Paradise Fossil Plant. To comply with the EPA's Mercury and Air Toxics Standards, TVA chose to retire two coal-fired units at Paradise Fossil Plant and replace them with natural gas generation. Prior to making this decision, TVA completed an Environmental Assessment in November 2013 under NEPA. In July 2014, the Kentucky Coal Association and several individuals filed suit in the United States District Court for the Western District of Kentucky alleging that TVA violated NEPA and the Energy Policy Act of 1992 in deciding to switch to natural gas generation. The plaintiffs demand that TVA prepare an Environmental Impact Statement, and are asking the court to preliminarily enjoin TVA from taking any further action relating to these matters pending compliance with NEPA. The court denied the plaintiffs' motion for a preliminary injunction in December 2014 and dismissed the case in February 2015. In March 2015, the plaintiffs appealed the court's decision to the United States Court of Appeal for the Sixth Circuit, and in October 2015, the Sixth Circuit affirmed the court's decision.

Kingston Fossil Plant NPDES Permit Administrative Appeal. The Sierra Club filed a challenge to the National Pollutant Discharge Elimination System ("NPDES") permit issued by Tennessee for the scrubber-gypsum pond discharge at Kingston in November 2009 before the Tennessee Board of Water Quality, Oil and Gas ("TN Board"). TDEC is the defendant in the challenge, and TVA has intervened in support of TDEC's decision to issue the permit. The proceedings have been stayed at the request of the parties until December 21, 2015.

Bull Run Fossil Plant NPDES Permit Administrative Appeal. SACE and the TCWN filed a challenge to the NPDES permit for the Bull Run Fossil Plant in November 2010. TDEC is the defendant in the challenge, and TVA's motion to intervene to support TDEC's decision to issue the permit was granted in January 2011. At the contested case hearing in October 2013, the TN Board granted TDEC's and TVA's joint motion for involuntary dismissal following the conclusion of the petitioners' presentation of evidence. In December 2013, TCWN and SACE filed a petition for review of the TN Board's decision in the Chancery Court for Davidson County, Tennessee. In March 2015, the court issued a final order affirming the TN Board's decision, and the petitioners subsequently appealed the court's decision to the Tennessee Court of Appeals.

Johnsonville Fossil Plant NPDES Permit Administrative Appeal. SACE and TCWN filed a challenge to the NPDES permit for the Johnsonville Fossil Plant in March 2011. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in August 2011. The plaintiffs voluntarily dismissed this case in February 2015.

John Sevier Fossil Plant NPDES Permit Administrative Appeal. SACE and TCWN filed a challenge to the NPDES permit for John Sevier in May 2011. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in August 2011. The plaintiffs voluntarily dismissed this case in February 2015.

Gallatin Fossil Plant NPDES Permit Administrative Appeal. SACE, TCWN, and the Sierra Club filed a challenge to the NPDES permit for Gallatin in June 2012. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in September 2012. Following discovery, SACE, TCWN, and the Sierra Club voluntarily dismissed seven of the eight claims asserted in their petition. TVA moved to dismiss the remaining claim, and the ALJ assigned to the matter granted TVA's motion and dismissed the case. On November 7, 2014, SACE, TCWN, and the Sierra Club filed a petition for review of the ALJ's dismissal in the Chancery Court for Davidson County, Tennessee. In February 2015, the court issued a final order affirming that the Gallatin NPDES permit was lawfully issued. In March 2015, the petitioners appealed the court's decision to the Tennessee Court of Appeals.

## Edgar Filing: Tennessee Valley Authority - Form 10-K

Petitions Resulting from Japanese Nuclear Events. As a result of events that occurred at the Fukushima Daiichi Nuclear Power Plant in March 2011, petitions have been filed with the NRC which could impact TVA's nuclear program.

### • Petition to Immediately Suspend the Operating Licenses of GE BWR Mark I Units Pending the Full NRC Review With Independent Expert and Public Participation From Affected Emergency Planning Zone Communities

Beyond Nuclear filed a petition in April 2011, requesting that the NRC take emergency enforcement action against all nuclear reactor licensees that operate units that use the General Electric Mark I BWR design. TVA uses this design at Browns Ferry Nuclear Plant ("Browns Ferry") Units 1, 2, and 3. The petition requests the NRC to take several actions, including the suspension of the operating licenses at the affected nuclear units, including Browns Ferry, until several milestones have been met. In December 2011, the NRC provided its initial response to the petition. The NRC accepted five specific requests that would apply directly or indirectly to Browns Ferry, including issues relating to spent fuel pool use and location, Mark I containment hardened vent systems and design, and backup electrical power. Each of these items was accepted for further investigation, but the requests for immediate action were rejected. The NRC ultimately denied the petition.

Petition Pursuant to 10 CFR 2.206 - Demand For Information Regarding Compliance with 10 CFR 50, Appendix A, General Design Criterion 44, Cooling Water, and 10 CFR 50.49, Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants



Table of Contents

A petition was filed by the Union of Concerned Scientists in July 2011, requesting that a demand for information be issued for affected licensees, including TVA with regards to Browns Ferry, describing how the facilities comply with General Design Criterion 44, Cooling Water, within Appendix A to 10 CFR Part 50, and with 10 CFR 50.49, Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants, for all applicable design and licensing bases events. In November 2015, the NRC denied the petition.

## 23. Related Parties

TVA is a wholly-owned corporate agency of the federal government, and because of this relationship, TVA's revenues and expenses are included as part of the federal budget as a revolving fund. TVA's purpose and responsibilities as an agency are described under the "Other Agencies" section of the federal budget.

TVA currently receives no appropriations from Congress and funds its business using power system revenues, power financings, and other revenues. TVA is a source of cash to the federal government. With its payment of \$10 million during 2014, TVA fulfilled its requirement to repay \$1.0 billion of its Power Program Appropriation Investment. TVA will continue to pay a return on the outstanding balance of this investment indefinitely. See Note 18 — Appropriation Investment.

TVA also has access to a financing arrangement with the U.S. Treasury pursuant to the TVA Act. TVA and the U.S. Treasury entered into a memorandum of understanding under which the U.S. Treasury provides TVA with a \$150 million credit facility. This credit facility was renewed and has a maturity date of September 30, 2016. Access to this credit facility or other similar financing arrangements has been available to TVA since the 1960s. See Note 14 — Credit Facility Agreements.

In the normal course of business, TVA contracts with other federal agencies for sales of electricity and other services. Transactions with agencies of the federal government were as follows:

## Related Party Transactions

For the years ended, or at, September 30

	2015	2014	2013
Revenue from sales of electricity	\$ 130	\$ 128	\$ 120
Other income	115	120	84
Judgment settlement	52	17	18
Expenditures			
Operating expenses	227	267	299
Additions to property, plant, and equipment	37	19	15
Cash and cash equivalents	45	35	38
Accounts receivable, net	106	85	58
Accounts payable and accrued liabilities	98	146	133
Long-term power bonds, net	5	3	—
Return on Power Program Appropriation Investment	5	4	7
Return of Power Program Appropriation Investment	—	10	20

## 24. Unaudited Quarterly Financial Information

A summary of the unaudited quarterly results of operations for the years 2015 and 2014 follows. This summary should be read in conjunction with the audited consolidated financial statements appearing herein. Results for interim periods may fluctuate as a result of seasonal weather conditions, changes in rates, and other factors.

## Unaudited Quarterly Financial Information

2015

Edgar Filing: Tennessee Valley Authority - Form 10-K

	First	Second	Third	Fourth	Total
Operating revenues	\$2,411	\$2,863	\$2,558	\$3,171	\$11,003
Operating expenses	2,047	2,087	2,252	2,402	8,788
Operating income	364	776	306	769	2,215
Net income (loss)	81	496	32	502	1,111

142

---

Table of Contents

## Unaudited Quarterly Financial Information

2014

	First	Second	Third	Fourth	Total
Operating revenues	\$2,382	\$2,938	\$2,651	\$3,166	\$11,137
Operating expenses	2,164	2,362	2,453	2,569	9,548
Operating income	218	576	198	597	1,589
Net income (loss)	(67	) 295	(81	) 322	469

143

Table of Contents

Report of Independent Registered Public Accounting Firm

The Board of Directors of Tennessee Valley Authority

We have audited the accompanying consolidated balance sheets of Tennessee Valley Authority as of September 30, 2015 and 2014, and the related consolidated statements of operations, comprehensive income (loss), changes in proprietary capital, and cash flows for each of the three years in the period ended September 30, 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Tennessee Valley Authority at September 30, 2015 and 2014, and the consolidated results of its operations and its cash flows for each of the three years in the period ended September 30, 2015, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Tennessee Valley Authority's internal control over financial reporting as of September 30, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated November 20, 2015 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Chattanooga, Tennessee  
November 20, 2015

Table of Contents

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), evaluated the effectiveness of TVA's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) as of September 30, 2015. Based on this evaluation, TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), concluded that TVA's disclosure controls and procedures were effective as of September 30, 2015, to ensure that information required to be disclosed by TVA in reports that it files or submits under the Exchange Act, is recorded, processed, summarized, and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms, and include controls and procedures designed to ensure that information required to be disclosed by TVA in such reports is accumulated and communicated to TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), as appropriate, to allow timely decisions regarding required disclosure.

Internal Control over Financial Reporting

(a) Management's Annual Report on Internal Control over Financial Reporting

TVA's management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) and required by Section 404 of the Sarbanes-Oxley Act. TVA's internal control over financial reporting is designed to provide reasonable, but not absolute, assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. Because of the inherent limitations in all control systems, internal controls over financial reporting and systems may not prevent or detect misstatements.

TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), evaluated the design and effectiveness of TVA's internal control over financial reporting as of September 30, 2015, based on the framework in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, TVA's management concluded that TVA's internal control over financial reporting was effective as of September 30, 2015.

Although the effectiveness of internal control over financial reporting was not required to be subject to attestation by TVA's independent registered public accounting firm, TVA has chosen to obtain such a report. Ernst & Young LLP, the independent registered public accounting firm that audited the financial statements included in this Annual Report, has issued an attestation report on TVA's internal control over financial reporting.

(b) Changes in Internal Control over Financial Reporting

During the quarter ended September 30, 2015, there were no changes in TVA's internal control over financial reporting that materially affected, or are reasonably likely to materially affect, TVA's internal control over financial reporting.

145

---

Table of Contents

Report of Independent Registered Public Accounting Firm

The Board of Directors of Tennessee Valley Authority

We have audited Tennessee Valley Authority's internal control over financial reporting as of September 30, 2015, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Tennessee Valley Authority's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Tennessee Valley Authority maintained, in all material respects, effective internal control over financial reporting as of September 30, 2015, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Tennessee Valley Authority as of September 30, 2015 and 2014, and the related consolidated statements of operations, comprehensive income (loss), changes in proprietary capital, and cash flows for each of the three years in the period ended September 30, 2015, and our report dated November 20, 2015 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Chattanooga, Tennessee  
November 20, 2015

146

---



Table of Contents

ITEM 9B. OTHER INFORMATION

On November 20, 2015, the TVA Board of Directors approved adjustments to the compensation of Chief Executive Officer William D. Johnson for 2016. Mr. Johnson's base salary will remain at \$995,000, and his Executive Annual Incentive Plan ("EAIP") target opportunity will increase from 110 percent of his base salary to 150 percent of his base salary. Mr. Johnson was awarded a performance grant ("LTP") of \$2,268,600 under TVA's Long-Term Incentive Plan ("LTIP") effective October 1, 2015, which will vest on September 30, 2018. Mr. Johnson was also awarded a retention grant ("LTR") of \$567,150 under TVA's LTIP effective October 1, 2015, which will vest and pay out in 1/3 increments annually over three years. Mr. Johnson, upon appointment as CEO, was eligible for an arrangement approved by the TVA Board under which he would be eligible to receive an additional performance award of up to \$325,000 annually based on the evaluation of his performance. With the increased opportunity under the EAIP, the performance arrangement will not exist for 2016 and future years.

On November 20, 2015, Mr. Johnson approved compensation adjustments for the following Named Executive Officers for 2016:

The salary for Mr. Pardee will increase from \$645,000 to \$664,350. Additionally, Mr. Pardee was awarded a LTP grant of \$835,000 effective October 1, 2015, which will vest on September 30, 2018. Mr. Pardee also received a LTR grant of \$200,000 effective October 1, 2015, which will vest and pay out in 1/3 increments annually over three years.

The salary for Mr. Thomas will increase from \$575,000 to \$592,250. Additionally, Mr. Thomas was awarded a LTP grant of \$715,000 effective October 1, 2015, which will vest on September 30, 2018. Mr. Thomas also received a LTR grant of \$200,000 effective October 1, 2015, which will vest and pay out in 1/3 increments annually over three years.

The salary for Mr. Grimes will increase from \$555,000 to \$600,000. Additionally, Mr. Grimes was awarded a LTP grant of \$750,000 effective October 1, 2015, which will vest on September 30, 2018. Mr. Grimes also received a LTR grant of \$260,000 effective October 1, 2015, which will vest and pay out in 1/3 increments annually over three years.

The salary for Mr. Skaggs will increase from \$445,000 to \$471,700. Additionally, Mr. Skaggs was awarded a LTP grant of \$600,000 effective October 1, 2015, which will vest on September 30, 2018. Mr. Skaggs also received a LTR grant of \$150,000 effective October 1, 2015, which will vest and pay out in 1/3 increments annually over three years.

The salary adjustments described above became effective as of October 1, 2015. No adjustments were made to any other existing elements of compensation for these Named Executive Officers for 2016.

Table of Contents

## PART III

## ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

## Directors

TVA is administered by a board of nine part-time members appointed by the President of the United States with the advice and consent of the U.S. Senate. The Chair of the TVA Board is selected by the members of the TVA Board. Under the TVA Act, to be eligible to be appointed as a member of the TVA Board, an individual (i) must be a United States citizen; (ii) must have management expertise relative to a large for-profit or nonprofit corporate, government, or academic structure; (iii) cannot be a TVA employee; (iv) must make a full disclosure to Congress of any investment or other financial interest that the individual holds in the energy industry; and (v) must affirm support for the objectives and missions of TVA, including being a national leader in technological innovation, low-cost power, and environmental stewardship. In addition, the President of the United States, in appointing members of the TVA Board, must (i) consider recommendations from other public officials such as the Governors of the states in TVA's service area; individual citizens; business, industrial, labor, electric power distribution, environmental, civic, and service organizations; and the Congressional delegations of the states in TVA's service area; and (ii) seek qualified members from among persons who reflect the diversity, including geographical diversity, and needs of TVA's service area. At least seven of the nine TVA Board members must be legal residents of the TVA service area.

TVA Board members serve five-year terms, and at least one member's term ends each year. After a member's term ends, the member is permitted under the TVA Act to remain in office until the earlier of the end of the then-current session of Congress or the date a successor takes office. The TVA Board, among other things, establishes broad goals, objectives, and policies for TVA; develops long-range plans to guide TVA in achieving these goals, objectives, and policies; approves annual budgets; and establishes a compensation plan for employees.

The TVA Board as of November 20, 2015, consisted of the following nine individuals with their ages and terms of office provided:

Directors	Age	Year Current Term Began	Year Term Expires
Joe H. Ritch, Chair	65	2013	2016
Richard C. Howorth	64	2011	2015 <sup>(1)</sup>
Marilyn A. Brown	66	2013	2017
V. Lynn Evans	62	2013	2017
C. Peter Mahurin	77	2013	2016
Michael R. McWherter	59	2013	2016
Virginia T. Lodge	65	2014	2019
Ronald A. Walter	66	2014	2019
Eric M. Satz	46	2015	2018

## Notes

(1) Although Director Howorth's term expired in May 2015, he was permitted under the TVA Act to remain in office until the earlier of the end of the current session of Congress or the date a successor takes office.

Mr. Ritch of Huntsville, Alabama, joined the TVA Board in January 2013, and began serving as Chair of the TVA Board in May 2014. He has been an attorney at the Sirote & Permutt, PC law firm in Huntsville, Alabama, since 1982. He has been a director of Axometrics, which designs and manufactures Mueller Matrix polarization testing for LCD panels, since 2004. He has also served as Chair of the Tennessee Valley Base Realignment and Closure Committee since 1994, as Co-Chair of the Tennessee Valley Growth Coordination Group since 2008, and as a board member of

## Edgar Filing: Tennessee Valley Authority - Form 10-K

the Von Braun Center for Innovative Science since 2006. He was a member of the University of Alabama System Board of Trustees from 2005 to 2011.

Mr. Howorth of Oxford, Mississippi, joined the TVA Board in July 2011. He is the owner of Square Books, an Oxford independent bookstore he founded in 1979. Mr. Howorth served two terms as the mayor of Oxford, from 2001 to 2009, during which time he was chair of the authority overseeing the Oxford Electric Department. From 2001 to 2009, he also served as a director and officer of the North Mississippi Industrial Development Association, an economic development consortium made up of power association directors and mayors of cities in 29 Mississippi counties in the TVA service area.

Dr. Brown of Atlanta, Georgia, served on the TVA Board from October 2010 to January 2013 and began a second term on the TVA Board in September 2013. Dr. Brown has been a Professor in the School of Public Policy at Georgia Institute of Technology in Atlanta, Georgia, since August 2006. From 1984 to August 2006, Dr. Brown worked at the Oak Ridge National Laboratory ("ORNL") in Oak Ridge, Tennessee. At ORNL, she was Deputy Director and Acting Director of the Engineering Science and Technology Division (from 2005 to 2006) and Program Director of the Energy Efficiency and Renewable Energy Program (from 2000 to 2005). Dr. Brown served from 2006 until 2009 as a member of the Board of Directors of the Southeast

Table of Contents

Energy Efficiency Alliance, serving as Board Chair from 2006 until 2008. She served as a member of the Board of Directors of the American Council for an Energy-Efficient Economy from 2002 until 2009. From 2002 until 2009, Dr. Brown was a commissioner on the National Commission on Energy Policy. She served as a member of the Board of Directors of the Alliance to Save Energy from 2000 through 2009.

Ms. Evans of Memphis, Tennessee, joined the TVA Board in January 2013. She has been the owner of V. Lynn Evans, CPA, a certified public accounting and consulting firm in Memphis, Tennessee, since 1983. Ms. Evans was a board member of Memphis Light, Gas, and Water Division, a TVA local power company customer, from 2004 to January 2013, and served as Chair from January 2008 to December 2009. She has been a director of community-based First Alliance Bank in Memphis, Tennessee, since its inception in 1998, holding various positions, including Chair of the audit committee and loan committee member. Ms. Evans has also served in leadership positions in a number of community organizations, including as a board member of ArtsMemphis from 1995 to 2008, Community Foundation of Greater Memphis from 1995 to 2004 and from 2006 to present, the RISE Foundation from 1997 to 2007, and the Women's Foundation for a Greater Memphis from 1999 to 2001. Ms. Evans is a member of the American Institute of Certified Public Accountants and the Tennessee Society of Certified Public Accountants (Memphis Chapter).

Mr. Mahurin of Bowling Green, Kentucky, joined the TVA Board in January 2013. He has been Chair of Hilliard Lyons Financial Services, a financial services firm based in Louisville, Kentucky, since 2008. Mr. Mahurin has worked for Hilliard Lyons in various capacities since 1968. Mr. Mahurin has been a director of Houchens Industries, Inc., a diversified conglomerate based in Bowling Green, Kentucky, since 1992; Gray Construction, an engineering, design and construction company based in Lexington, Kentucky, since 2007; Albany Bancorp, Inc., a bank holding company based in Albany, Kentucky, since 1992; First Cecilian Bancorp, a bank holding company based in Cecilia, Kentucky, since 1997; and Jackson Financial, a bank holding company based in Mayfield, Kentucky, since 2007. He is also a board member of the Governor's Scholars of Kentucky.

Mr. McWherter of Jackson, Tennessee, joined the TVA Board in January 2013. He has been the owner and president of Central Distributors, Inc., and Volunteer Distributing Company Inc., both Tennessee-based beverage distribution companies, since 1989 and 1986, respectively. He has been a director of First State Bank, a bank holding company in Union City, Tennessee, since 2002, and served as Chair from 2007 to 2009. He also served as Chair of the First State Bank Audit Committee from 2007 to 2009. He served as a director of the Jackson Energy Authority, a TVA local power company customer, from 2007 to January 2013. Mr. McWherter has also served in leadership positions in a number of community organizations, including as a board member of the Tennessee Performing Arts Center from 1988 to 1995, a director of the Jackson Chamber of Commerce from 1990 to 1996, a director of the Nashville Arts Council from 1982 to 1985, and a member of the Tennessee Executive Residence Preservation Foundation Board from 2002 to 2010.

Ms. Lodge of Nashville, Tennessee, joined the TVA Board in December 2014. She is currently CEO of FSI Inc., a position she has held since 2012. She served as Commissioner of the Tennessee Department of Human Services from 2003 to 2011. From 2002 to 2003, she worked on Tennessee Governor Phil Bredesen's campaign and transition team. Ms. Lodge was National Director of GoreCorps for the Gore for President Campaign in 2000 and served as Executive Director for Kids Voting of Middle Tennessee from 1994 to 1999.

Mr. Walter of Memphis, Tennessee, is currently the President and General Manager of WREG-TV, a Memphis-based television station. Mr. Walter has been employed by WREG-TV since 1987, and assumed his current position in 2004. Mr. Walter was Vice President of Customer Relations for the Memphis Light, Gas and Water Division from 1982 to 1987. From 1980 to 1982, he served as Assistant to the President at Memphis Light, Gas and Water Division.

Mr. Satz of Nashville, Tennessee, joined the TVA Board in August 2015. He is a Managing Member of the Tennessee Community Ventures Fund, LLC ("TNCV"), a company he co-founded in 2009, and is Executive Chairman of one of

the TNCV portfolio companies. From 2010 to 2014, he served as Investor, Advisor, and Vice President of Business Development for Panopto, Inc. Mr. Satz co-founded and was Chief Executive Officer of Plumgood Food, LLC from 2004 to 2008. Earlier in his career, Mr. Satz served in various investment banking roles, including as Vice President in the Technology Investment Banking Groups at Credit Suisse First Boston and Donaldson, Lufkin & Jenrette. In 1999, Mr. Satz co-founded Currenex, an online global foreign currency exchange company.

Table of Contents

## Executive Officers

TVA's executive officers as of November 20, 2015, their titles, their ages, and the date their employment with TVA commenced are as follows:

Executive Officers	Title	Age	Employment Commenced
William D. Johnson	President and Chief Executive Officer	61	2013
Joseph P. Grimes, Jr.	Executive Vice President and Chief Nuclear Officer	59	2013
Charles G. Pardee	Executive Vice President and Chief Operating Officer	55	2013
Sherry A. Quirk	Executive Vice President and General Counsel	61	2015
John M. Thomas, III	Executive Vice President and Chief Financial Officer	52	2005
Van M. Wardlaw	Executive Vice President and Chief External Relations Officer	55	1982
Katherine J. Black	Senior Vice President of Human Resources and Communications	60	1986
Ricardo G. Pérez	Senior Vice President, Shared Services	56	2013
Michael D. Skaggs	Senior Vice President, Watts Bar Operations and Construction	55	1994
Diane T. Wear	Vice President and Controller (Principal Accounting Officer)	47	2008

Mr. Johnson has served as TVA's President and Chief Executive Officer since January 2013. Mr. Johnson served as Chair, President and Chief Executive Officer of Progress Energy, Inc. ("Progress Energy"), an electric utility based in Raleigh, North Carolina, from October 2007 to July 2012. During this time, Mr. Johnson also served as the Chair of Progress Energy Carolinas, Inc., and Progress Energy Florida, Inc., both of which are subsidiaries of Progress Energy. Mr. Johnson held a number of other positions before he became Chair and CEO of Progress Energy, including President and Chief Operating Officer of Progress Energy; Group President for Energy Delivery; President and Chief Executive Officer for Progress Energy Service Company, LLC; and General Counsel and Corporate Secretary for Progress Energy. Mr. Johnson joined Carolina Power & Light Company ("CP&L"), a predecessor to Progress Energy, in 1992. Before joining CP&L, Mr. Johnson was a partner with the Raleigh, North Carolina, law office of Hunton & Williams LLP, where he specialized in the representation of utilities.

Mr. Grimes was named TVA's Executive Vice President and Chief Nuclear Officer in July 2013. Before joining TVA, Mr. Grimes worked at Exelon Nuclear and held a variety of positions there, including Senior Vice President, Engineering and Technical Services, Exelon Nuclear Fleet (from 2011 to 2013), Senior Vice President, Mid-Atlantic Operations (from 2009 to 2011), and Site Vice President at Peach Bottom Nuclear Station (from 2007 to 2008). Mr. Grimes joined Exelon Nuclear in 1979.

Mr. Pardee joined TVA in April 2013 as Executive Vice President and Chief Generation Officer, and he was named Executive Vice President and Chief Operating Officer in September 2013. Mr. Pardee worked at Exelon Corporation, an energy company, and its subsidiaries from February 2000 to November 2012. He served as Chief Operating Officer, Exelon Generation from April 2010 to November 2012, as Chief Nuclear Officer, Exelon Nuclear from October 2007 to April 2010, as Chief Operating Officer, Exelon Nuclear from June 2005 to October 2007, as Senior Vice President, Nuclear Fleet Services from August 2003 to June 2005, as Senior Vice President, Mid-Atlantic Operations from January 2002 to August 2003, and as Site Vice President, LaSalle County Generation Station from February 2000 to January 2002.

Ms. Quirk has served as TVA's Executive Vice President and General Counsel since February 2015. From October 2010 to February 2015, Ms. Quirk was an equity partner in the law firm of Schiff Hardin LLP, which specializes in federal energy regulation, legislation and power supply transactions. Prior to joining Schiff Hardin, Ms. Quirk was a partner in the Energy Group of Sullivan & Worcester LLP, and a partner in the Energy Group of Verner, Liipfert, Bernhard, McPherson and Hand, specializing in federal energy regulation, legislation, power supply transactions and

state proceedings.

Mr. Thomas has served as TVA's Chief Financial Officer since June 2010 and was also named Executive Vice President in February 2012. He served as Executive Vice President of People and Performance from January 2010 to June 2010, as Senior Vice President, Corporate Governance and Compliance from July 2009 to January 2010, as Controller and Chief Accounting Officer from January 2008 to September 2009, and as the General Manager, Operations Business Services from November 2005 to January 2008. Prior to joining TVA, Mr. Thomas was Chief Financial Officer during 2005 for Benson Security Systems. He was also the Controller of Progress Fuels Corporation (from 2003 to 2005) and Controller of Progress Ventures, Inc. (from 2001 to 2002), both subsidiaries of Progress Energy.

Mr. Wardlaw was named Executive Vice President and Chief External Relations Officer in July 2014. Mr. Wardlaw served as Senior Vice President, Customer Relations, from September 2013 to July 2014, as Executive Vice President, Customer Relations, from June 2011 to September 2013, as Executive Vice President, Enterprise Relations, from October 2010 to June 2011, as Acting Executive Vice President of Strategy and Planning from January 2010 until September 2010, as Executive Vice President of Power Supply and Fuels from July 2008 to August 2010, as Senior Vice President, Commercial Operations and Fuels from January 2007 to June 2008, as Vice President, Bulk Power Trading from September 2006 to December 2006, and as Vice President of Transmission and Reliability from December 2000 to September 2006. Mr. Wardlaw

150

---

## Table of Contents

began his career with TVA in January 1982 as an electrical engineer, and has also worked in customer service, marketing, and field services.

Ms. Black was named TVA's Senior Vice President of Human Resources and Communications in September 2013. She previously served as Vice President of Human Resources from October 2010 to September 2013 and Director of Employee Relations from February 2010 to April 2011. Before being selected as Vice President, Ms. Black served in several human resources positions. Prior to joining TVA in 1986, Ms. Black served in the U.S. Army.

Mr. Pérez was named Senior Vice President for Shared Services in February 2015. He previously served as Senior Vice President, Nuclear Support and Operations, from June 2014 to February 2015, and Vice President, Nuclear Projects, from November 2013 to June 2014. Prior to joining TVA in November 2013, Mr. Pérez served as President and Chief Operating Officer of Westinghouse Electric Company, where he had worked in various capacities from 1981 until his retirement in 2012.

Mr. Skaggs was named Senior Vice President, Watts Bar Operations and Construction in September 2013. Since joining TVA in 1993 as Manager of Projects at Watts Bar Nuclear Plant, Mr. Skaggs has held several management positions, including Senior Vice President, Nuclear Construction (February 2012 to September 2013), Senior Vice President of Nuclear Generation Development and Construction (October 2011 to February 2012), Site Vice President of Sequoyah Nuclear Plant (November 2010 to October 2011), Vice President of Nuclear Operations Support (December 2009 to November 2010), Site Vice President at Watts Bar Nuclear Plant (July 2005 to December 2009), and Site Vice President at Browns Ferry Nuclear Plant (July 2004 to July 2005).

Ms. Wear has served as TVA's Vice President and Controller since March 2012. Ms. Wear was the Assistant Controller from February 2010 to March 2012. Between April 2008, when she joined TVA, and February 2010, Ms. Wear was the General Manager, External Reporting/Accounting Policy and Research. Prior to joining TVA, Ms. Wear was a Managing Director at PricewaterhouseCoopers LLP. Ms. Wear joined a predecessor firm to PricewaterhouseCoopers LLP in January 1992.

## Disclosure and Financial Code of Ethics

TVA has a Disclosure and Financial Ethics Code ("Financial Ethics Code") that applies to all executive officers (including the Chief Executive Officer, Chief Financial Officer, and Controller) and directors of TVA as well as to all employees who certify information contained in quarterly reports or annual reports or who have responsibility for internal control self-assessments. The Financial Ethics Code includes provisions covering conflicts of interest, ethical conduct, compliance with applicable laws, rules, and regulations, responsibility for full, fair, accurate, timely, and understandable disclosures, and accountability for adherence to the Financial Ethics Code. TVA will provide a current copy of the Financial Ethics Code to any person, without charge, upon request. Requests may be made by calling 888-882-4975 or by sending an e-mail to: [investor@tva.com](mailto:investor@tva.com). Any waivers of or changes to provisions of the Financial Ethics Code that require disclosure pursuant to applicable Securities and Exchange Commission requirements will be promptly disclosed to the public, subject to limitations imposed by law, on TVA's website at: [www.tva.gov](http://www.tva.gov). Information contained on TVA's website shall not be deemed incorporated into, or to be a part of, this Annual Report.

## Committees of the TVA Board

The TVA Board has an Audit, Risk, and Regulation Committee established in accordance with the TVA Act. TVA's Audit, Risk, and Regulation Committee consists of V. Lynn Evans, Eric Satz, and Ron Walter.



## Edgar Filing: Tennessee Valley Authority - Form 10-K

TVA is exempted by Section 37 of the Exchange Act from complying with Section 10A(m)(3) of the Exchange Act, which requires each member of a listed issuer's audit committee to be an independent member of the board of directors of the issuer. The TVA Act contains certain provisions that are similar to the considerations for independence under Section 10A(m)(3) of the Exchange Act, including that to be eligible for appointment to the TVA Board, an individual shall not be an employee of TVA and shall make full disclosure to Congress of any investment or other financial interest that the individual holds in the energy industry.

Under Section 10A(m)(2) of the Exchange Act, which applies to TVA, the audit committee is directly responsible for the appointment, compensation, and oversight of the external auditor; however, the TVA Act assigns the responsibility for engaging the services of the external auditor to the TVA Board.

The TVA Board has also established the following committees in addition to the Audit, Risk and Regulation Committee:

- Finance, Rates, and Portfolio Committee
- External Relations Committee
- People and Performance Committee
- Nuclear Oversight Committee

Table of Contents

ITEM 11. EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

The following Compensation Discussion and Analysis describes TVA's compensation philosophy and the policies and decisions that guided compensation for TVA's Named Executive Officers in 2015. The 2015 Named Executive Officers are as follows:

- William D. Johnson, President and Chief Executive Officer ("CEO");
- Charles G. Pardee, Executive Vice President and Chief Operating Officer ("COO");
- John M. Thomas, III, Executive Vice President and Chief Financial Officer ("CFO");
- Joseph P. Grimes, Jr., Executive Vice President and Chief Nuclear Officer ("CNO"); and
- Michael D. Skaggs, Senior Vice President, Watts Bar Operations and Construction.

Detailed compensation information for these executives is contained in the Summary Compensation Table.

Executive Summary

**2015 At-Risk Compensation.** Based on its annual performance and productivity, TVA rewards employees through its Winning Performance Team Incentive Plan ("WPTIP") and Executive Annual Incentive Plan ("EAIP"). In addition, certain executives in critical positions, including the Named Executive Officers, participate in the Executive Long-Term Incentive Plan ("ELTIP"). Similar to incentive programs at other utilities, awards under the WPTIP, EAIP, and ELTIP are not part of base pay but are "at risk" because employees must earn them each year by reaching or exceeding specific targets.

For 2015, awards to TVA's Named Executive Officers under the EAIP ranged from 107 percent to 117 percent of the target opportunity. The following factors contributed to overall performance:

- Fulfilled the three-year goal to sustainably reduce \$500 million in operating and maintenance ("O&M") expense;
- Improved performance of TVA's nuclear, coal-fired, and gas-fired generation units; and
- Helped to retain and attract 76,200 jobs and over \$7.8 billion in capital investment to the TVA service area.

In addition, for the three-year period ended September 30, 2015, awards to TVA's Named Executive Officers under the ELTIP were 113 percent of the target opportunity primarily because of overall good performance and financial discipline throughout the 2013 - 2015 performance period.

**2015 Highlights.** On November 6, 2014, the TVA Board approved adjustments to the compensation of CEO William Johnson for 2015. These adjustments increased his base salary from \$950,000 to \$995,000, increased his EAIP target opportunity from 100 percent to 110 percent of his base salary, and increased his ELTIP target opportunity from 150 percent to 175 percent of his base salary. In addition, Mr. Johnson was granted \$450,000 under TVA's Long-Term Retention Incentive Plan ("LTRIP"). Mr. Johnson will be vested and receive payment of the \$450,000 award on December 31, 2016, as long as he remains employed with TVA on that date.

On November 13, 2014, Mr. Johnson approved compensation adjustments for the following Named Executive Officers for 2015:

The salary for Mr. Pardee increased from \$620,000 to \$645,000, and Mr. Pardee was granted an award of \$200,000 under the LTRIP on January 1, 2015. Mr. Pardee will be vested in and receive payment of the full award on December 31, 2017, as long as he remains employed with TVA on that date.

The salary for Mr. Thomas increased from \$550,000 to \$575,000, and Mr. Thomas was granted two awards under the LTRIP. Each award was \$200,000 and was granted on January 1, 2015. Mr. Thomas will be vested in and receive payment of the full awards under the grants on December 31, 2016, and December 31, 2017, respectively, as long as he remains employed with TVA on those dates. Mr. Johnson also approved a retention incentive arrangement under which Mr. Thomas will be eligible to receive \$200,000 on December 31, 2015, as long as he remains employed with TVA on that date, performs all duties in a highly effective manner, and maintains satisfactory performance through the end of the retention period.

The salary for Mr. Grimes increased from \$535,000 to \$555,000, and Mr. Grimes was granted an award of \$150,000 under the LTRIP on January 1, 2015. Mr. Grimes will be vested in and receive payment of the full award on December 31, 2017, as long as he remains employed with TVA on that date.

The salary for Mr. Skaggs increased from \$431,600 to \$445,000, and Mr. Skaggs was granted an award of \$150,000 under the LTRIP on January 1, 2015. Mr. Skaggs will be vested in and receive payment of the full award on December 31, 2017, as long as he remains employed with TVA on that date.

Table of Contents

The compensation adjustments described above became effective for the Named Executive Officers as of October 1, 2014. No adjustments were made to any other existing elements of compensation for the Named Executive Officers for 2015.

Philosophy

TVA aims to achieve its mission by attracting, retaining, and motivating highly qualified and committed executives to guide the organization's strategy and performance. TVA follows a compensation plan ("Compensation Plan") as adopted by the TVA Board in accordance with guidance of the TVA Act. The Compensation Plan is designed to:

Provide market-based, competitive compensation levels so TVA can attract, retain, and motivate highly competent employees. Total direct compensation generally targets the 50th percentile of the relevant labor market, although some positions, such as those requiring certain nuclear expertise, are targeted up to the 75th percentile based on labor market scarcity and other issues.

Reward employees for performance. A substantial portion of executive pay, including pay for the Named Executive Officers, is tied to performance improvement. As illustrated in the charts below, at least half (and in some cases almost two-thirds) of each Named Executive Officer's direct compensation opportunity is delivered through performance-based incentive programs.

65 Percent Of Compensation Is At Risk

51 Percent Of Compensation Is At Risk

Align the organization's short- and long-term goals and objectives with compensation by providing a mix of salary and performance-based annual and long-term incentives.

Align performance and productivity improvement at all levels by setting consistent performance goals and objectives for all levels of the organization.

The TVA Board follows these requirements of the TVA Act in designing and implementing its Compensation Plan:

Compensation will be based on an annual survey of prevailing compensation for similar positions in private industry, including engineering and electric utility companies, publicly-owned electric utilities, and federal, state, and local governments; and

Compensation will take into account education, experience, level of responsibility, geographic differences, and retention and recruitment needs.

Authority for the Executive Compensation Program

The TVA Board, under the authority of the TVA Act, has responsibility for establishing compensation for TVA employees, including the Named Executive Officers. The TVA Board is directed under Section 2 of the TVA Act to establish a plan that specifies all compensation (such as salary and any other pay, benefits, incentives, or other form of remuneration) for the CEO and TVA employees.

## Table of Contents

The TVA Act also provides that:

The TVA Board will annually approve all compensation (such as salary and any other pay, benefits, incentives, or other form of remuneration) for all managers and technical personnel who report directly to the CEO (including any adjustment(s) to compensation);

On the recommendation of the CEO, the TVA Board will approve the salaries of employees whose salaries would be in excess of Level IV of the Executive Schedule of the United States Government (\$158,700 in 2015); and

The CEO will determine the salary and benefits of employees whose annual salary is not greater than Level IV of the Executive Schedule (\$158,700 in 2015).

Under the authority of the TVA Act, the TVA Board, its People and Performance Committee (the "Committee"), and individual TVA Board members are involved in compensation matters. The TVA Board has delegated to the CEO the authority to approve, or delegate to others the authority to approve, all personnel and compensation action for which the TVA Board is responsible but has not reserved for itself. The TVA Board has taken additional action to delegate authority with respect to executive compensation, as follows:

The TVA Board has approved for the direct reports to the CEO compensation ranges of 80 percent to 110 percent of the targeted total direct compensation for comparable positions. These targeted levels of total direct compensation are consistent with the Compensation Plan and with external benchmarking sources. The TVA Board has also authorized the CEO to set or adjust compensation for present or future direct reports within such compensation ranges, as well as to approve the parameters under which such executives may participate in certain supplemental benefit plans, such as TVA's Supplemental Executive Retirement Plan ("SERP"), provided that the CEO may not finally set or adjust such compensation until the TVA Board members have been notified of the proposed compensation and given the opportunity to ask the Committee, or the full TVA Board, to review the proposed compensation before it becomes effective.

The TVA Board has delegated to the Chair of the TVA Board, in consultation with the Committee and with input from individual members of the TVA Board, the authority to evaluate and rate the CEO's performance during the year, and the authority to approve any payout to the CEO under the EAIP, based on, among other things, the CEO's evaluated performance during the year.

The TVA Board has delegated to the CEO, in consultation with the Committee and with input from individual members of the TVA Board, the authority to approve the individual performance goals for the CEO's direct reports and the authority to evaluate and rate the performance of the CEO's direct reports during the year.

### TVA Board Committee Oversight

The Committee was responsible for oversight of executive compensation pursuant to the Compensation Plan, review of this Compensation Discussion and Analysis, and review of performance goal achievement for 2015. As delegated by the TVA Board, the Committee also (1) reviewed proposed CEO actions to set or adjust compensation for his direct reports, (2) consulted with the Chair of the TVA Board about the Chair's proposed evaluation and rating of the CEO's performance during the year and about the proposed payout to the CEO under the EAIP, and (3) consulted with the CEO on the proposed individual performance goals and evaluation and performance ratings for the CEO's direct reports for the year. The Committee used independent consulting firm Towers Watson in 2015 to help evaluate competitive compensation. The Committee assessed certain independence factors and determined the firm's work raised no potential conflict of interest.

#### Assessment of Risk

TVA's Enterprise Risk Management Organization, in coordination with members of TVA's management teams including Human Resources and Compensation and Benefits, conducts an annual assessment of enterprise level risks that takes into consideration risks that arise from its compensation policies and practices, in order to identify any risks that are reasonably likely to have a material adverse effect on the organization and its achievement of its strategic goals and objectives.

Based on the results of this assessment, no risks were identified with the compensation policies and practices that are reasonably likely to have a material adverse effect on TVA's achievement of its strategic goals and objectives.

#### Use of Market Data and Benchmarking

TVA generally targets total direct compensation for executives at a competitive level based on the relevant labor market. After compiling competitive market compensation for the positions at the beginning of 2015, the Committee, with assistance from Towers Watson, used the information to:

- Test target compensation level and incentive opportunity competitiveness; and

Table of Contents

Determine appropriate target compensation levels and incentive opportunities to maintain the desired degree of market competitiveness.

TVA's relevant labor market for most executives, including the Named Executive Officers, comprised both private and publicly-owned companies in the energy services industry of similar revenue and scope to TVA. For the survey-based analysis, TVA used the 2014 Towers Watson Energy Services Executive Compensation Database to look at the following energy-services companies with annual revenues greater than \$6.0 billion:

AES Corp.	Duke Energy Corp.	Pacific Gas and Electric Co.
American Electric Power Co., Inc.	Edison International	PPL Corp.
Calpine	Entergy Corp.	Public Service Enterprise Group Inc.
CenterPoint Energy, Inc.	Exelon Corp.	Sempra Energy
CMS Energy Corp.	FirstEnergy Corp.	Southern Company
Consolidated Edison, Inc.	IPR-GDF Suez North America	Xcel Energy Inc.
Dominion Resources, Inc.	NextEra Energy, Inc.	
DTE Energy Co.	Northeast Utilities	

For the analysis of proxy statements and annual reports on Form 10-K, TVA looked at all companies in the peer group above, as well as one additional company in the energy services industry, NRG Energy, as recommended by Towers Watson. This company was added to the analysis because it is an energy services firm with annual revenue between one-half and two times TVA's revenue, but did not participate in the 2014 Towers Watson Energy Services Executive Compensation Survey.

In addition, TVA considered the following companies with revenues between \$3.0 billion and \$6.0 billion that participated in the 2014 Towers Watson Energy Services Executive Compensation Survey: Alliant Energy Corp.; Ameren Corp.; Integrys Energy Group; MDU Resources; NiSource Inc.; OGE Energy; Pepco Holdings Inc.; Pinnacle West Capital; Puget Energy Inc.; SCANA Corp.; TECO Energy; and Wisconsin Energy Corp.

The following government entities that participated in the 2014 Towers Watson Energy Services Executive Compensation Survey were also considered by the Committee: Colorado Springs Utilities; Electricities of North Carolina; Energy Northwest; Grand River Dam Authority; JEA; Lower Colorado River Authority; New York Power Authority; Omaha Public Power; and Salt River Project. Each of these government entities has annual revenue of less than \$3.0 billion.

Table of Contents

Executive Compensation Program Components

The primary compensation program components for 2015 for the Named Executive Officers are summarized in the diagram below and are briefly described in the table and the narrative that follow the diagram.

156

---



Table of Contents

Primary Compensation Program Components for Named Executive Officers

Compensation Component	Objective	Key Features
Annual Salary	Fixed base compensation to executives	<p>Annual salary is targeted at the median (50<sup>th</sup> percentile) for similar positions at other companies in TVA's peer group or above the median (50<sup>th</sup> to 75<sup>th</sup> percentile) for positions affected by market scarcity, recruitment and retention issues, and other business reasons.</p> <p>Historically, salary has been typically reviewed annually to consider changes in peer group benchmark salaries and/or exceptional individual merit performances.</p>
Executive Annual Incentive Plan ("EAIP")	Not-guaranteed, variable, and based on the attainment of pre-established performance goals for the fiscal year	<p>Annual incentive payouts are based on the results of established goals of each strategic business unit scorecard, as determined from year to year by the TVA Board or the CEO, as applicable. Annual incentive payouts may be impacted by a corporate multiplier or adjusted by the TVA Board or CEO, as applicable, based on the evaluation of performance during the year.</p> <p>Target annual incentive opportunities increase with position and responsibility and are based on the opportunities other companies in TVA's peer group provide to those in similar positions.</p> <p>Annual incentive opportunities are reviewed annually to consider changes in peer group benchmark annual incentives.</p>
Executive Long-Term Incentive Plan ("ELTIP")	Not-guaranteed, variable, and based on the attainment of pre-established performance goals of a performance cycle, typically three fiscal years	<p>Participation is limited to executives in critical positions who make decisions that significantly influence developing and attaining TVA's long-term strategic objectives.</p> <p>Long-term incentive payouts are based on achievement of performance goals established for a specific, three-year performance cycle and may be adjusted by the TVA Board, based on the evaluation of performance during the cycle.</p> <p>Long-term incentive opportunities are reviewed annually for the next three-year performance cycle to consider changes made in long-term incentives by companies in TVA's peer group.</p>
Long-Term Deferred Compensation Plan ("LTDCP")	Awarded in the form of annual credits that vest after a specified period of time, typically three to five years	<p>Awarded to provide retention incentives to executives similar to those provided by restricted stock or restricted stock units in publicly traded companies.</p> <p>Executives generally must remain at TVA for the entire length of the agreement to receive compensation credits.</p> <p>Long-term deferred compensation is generally reviewed annually and LTDCP credits, together with grants under the Long-Term</p>

Edgar Filing: Tennessee Valley Authority - Form 10-K

		Retention Incentive Plan, are targeted to provide approximately 20 to 30 percent of total long-term compensation.
		Awarded to provide retention incentives to executives similar to those provided by restricted stock or restricted stock units in publicly-traded companies.
Long-Term Retention Incentive Plan ("LTRIP")	Retention-oriented plan; similar to the Long-Term Deferred Compensation Plan	Grants will vest after a specified period of time, usually no longer than three years.
		LTRIP grants, together with LTDCP credits, are targeted to provide approximately 20 to 30 percent of total long-term compensation.
		Total direct compensation (salary plus annual and long-term incentive compensation plus long-term deferred compensation plus long-term retention incentive) is targeted at the median (50 <sup>th</sup> percentile) level for similar positions at other companies in TVA's peer group or above the median (50 <sup>th</sup> to 75 <sup>th</sup> percentile) for positions affected by market scarcity, recruitment and retention issues, or other business reasons.
Total Direct Compensation	Annual Salary plus Annual Incentive Compensation plus Long-Term Compensation	
		Broad-based plans available to full-time employees of TVA that are qualified under Internal Revenue Service ("IRS") rules and are similar to the qualified plans provided by other companies in TVA's peer group.
Pension Plans (Qualified Plans and Supplemental Executive Retirement Plan)	Both qualified and supplemental, which provide compensation beginning with retirement or termination of employment (if vesting requirements are satisfied)	Certain executives in critical positions also participate in a non-qualified pension plan that provides supplemental pension benefits at compensation levels that are higher than the limits specified by IRS regulations for qualified pension plans; these supplemental benefits are comparable to those provided by other companies in TVA's peer group.

Table of Contents

Salary. Annual salary is targeted at the median (50th percentile) for similar positions at other companies in TVA's peer group or above the median (50th to 75th percentile) for positions affected by market scarcity, recruitment and retention issues, and other business reasons. In general, salary is reviewed annually to consider changes in peer group benchmark salaries and/or exceptional individual merit performances. Salary increases are awarded based on prior year performance, and adjustments are made to bring base salaries into alignment with the market.

The salaries of the Named Executive Officers for 2015 and 2014 were as follows:

Executive	2015 <sup>(1)</sup>	2014	% change
Mr. Johnson	\$995,000	\$950,000	4.7%
Mr. Pardee	\$645,000	\$620,000	4.0%
Mr. Thomas	\$575,000	\$550,000	4.5%
Mr. Grimes	\$555,000	\$535,000	3.7%
Mr. Skaggs	\$445,000	\$431,600	3.1%

Note

(1) All salary changes were effective on October 1, 2014.

Annual Incentive Compensation. All executives, including the Named Executive Officers, participate in the EAIP. The EAIP is designed to encourage and reward executives for successfully achieving annual financial and operational goals. For 2015, an executive's annual incentive payment under the EAIP was calculated as follows:

EAIP Amount	=	Annual Salary	X	Annual Target Incentive Opportunity	X	Percent of Opportunity Achieved (0% to 150%)	X	Corporate Multiplier (0 to 1.00)	X	Subjective Individual Assessment
----------------	---	------------------	---	---	---	---	---	--	---	--

Each component of this calculation is discussed below (except for annual salary, which is discussed above).

Annual Target Incentive Opportunity. Annual incentive opportunities for participants in the EAIP generally increase with position and responsibility. For 2015, the TVA Board set Mr. Johnson's target EAIP award opportunity at 110 percent of salary. See Considerations Specific to Mr. Johnson. In October 2014, Mr. Johnson evaluated the appropriateness of the EAIP award opportunities for Mr. Pardee, Mr. Thomas, Mr. Grimes, and Mr. Skaggs and made no changes. Accordingly, target EAIP award opportunities of the Named Executive Officers for 2015 were as follows:

Named Executive Officers	Target Annual Incentive Opportunity <sup>(1)</sup>
Mr. Johnson	110%
Mr. Pardee	80%
Mr. Thomas	80%
Mr. Grimes	80%
Mr. Skaggs	70%

Note

(1) Represents a percent of each Named Executive Officer's salary.

Percent of Opportunity Achieved. The TVA Board and CEO worked together to establish seven different organizational scorecards for the 2015 EAIP (TVA Corporate, Operations, Nuclear Operations, Nuclear Construction, Power Operations, Projects, and Transmission). These scorecards are also used to determine annual incentive payouts for all non-executive TVA employees who participated in TVA's 2015 Winning Performance Team Incentive Plan ("WPTIP"). The EAIP payouts for the Named Executive Officers are based on four different scorecards, and the goals

and associated weightings for these scorecards are outlined below:

158

---

Table of Contents

TVA 2015 Organization Scorecards

Performance Measure	Corporate Scorecard (Johnson, Thomas)	Operations Scorecard (Pardee)	Nuclear Operations Scorecard (Grimes)	Nuclear Construction Scorecard (Skaggs)	Goals			
					Results Achieved	Threshold (50%)	Target (100%)	Maximum (150%)
Corporate Total Spending <sup>(1)</sup> (\$ in millions)	40%				\$792	\$856	\$837	\$817
Nuclear Unit Capability Factor ("UCF") (%) <sup>(2)</sup>	20%	25%	25%	20%	91.1%	89.8%	90.8%	92.0%
Coal Seasonal Equivalent Forced Outage Rate (%) <sup>(3)</sup>	15%	20%	15%	15%	4.8%	6.4%	5.9%	5.0%
Combined Cycle Seasonal Equivalent Forced Outage Rate (%) <sup>(4)</sup>	5%	10%	5%	5%	0.6%	3.3%	2.1%	1.1%
Load Not Served (System Minutes) <sup>(5)</sup>	10%	15%	10%	10%	3.8	5.8	4.4	3.7
Reportable Environmental Events <sup>(6)</sup>	10%	10%	10%	10%	22	17	12	9
Operations Total Spending <sup>(7)</sup> (\$ in millions)		20%	20%		\$3,918	\$4,079	\$3,960	\$3,840
Nuclear Operations Equipment Reliability Index <sup>(8)</sup>			15%		88	86	89	92
Nuclear Construction Total Spending <sup>(9)</sup> (\$ in millions)				20%	\$662	\$634	\$610	\$585
Watts Bar Construction Milestones <sup>(10)</sup>				20%	12	12	13	15
Total	100%	100%	100%	100%				

Notes

(1) Corporate Total Spending is defined as Non-Fuel Operating & Maintenance ("O&M") expense plus capital expense for corporate organizations plus Non-Fuel Inventory.

(2) Nuclear Unit Capability Factor ("UCF") is the ratio of available energy generation over a given period of time to the reference energy generation over the same time period.

(3) Coal Seasonal Equivalent Forced Outage Rate measures the generation lost because of forced events as a percentage of time a unit would have been scheduled to run. This indicator is for the months of December to March and June to September and includes all coal-fired plants.

(4) Combined Cycle Seasonal Equivalent Forced Outage Rate measures the generation lost because of forced events as a percentage of time a unit would have been scheduled to run. This indicator is for the months of December to March and June to September and included Caledonia, John Sevier, Lagoon Creek, Magnolia, and Southaven combined cycle plants.

(5) Load Not Served ("LNS") is a measure of the magnitude and duration of transmission system outages that affect TVA customers and is expressed in system minutes. LNS events caused by TVA on a distributor system will also count as a TVA event even if the TVA system remains energized.

(6) A Reportable Environmental Event ("REE") is an environmental event at a TVA facility or elsewhere caused by TVA or TVA contractors that violates permit conditions or other regulatory requirements and triggers regulatory required oral or written notification to or enforcement action by a regulatory agency. Multiple parameters or multiple media/regulatory violations that result from the same root cause/event are counted as one REE. However, repeat occurrences count as separate REEs if they occur in a different reporting period.

(7) Operations Total Spending includes Non-Fuel O&M expense plus total capital expense plus Non-Fuel Inventory for the Operations organization excluding Nuclear Construction.

Table of Contents

(8) Nuclear Operations Equipment Reliability Index consists of leading and lagging indicators of nuclear equipment reliability measuring operational performance, safety system performance, maintenance and work management, and planning/monitoring.

(9) Nuclear Construction Total Spending includes non-fuel O&M expense plus total capital expense plus Non-Fuel Inventory for Nuclear Construction.

(10) Watts Bar Construction Milestones are major components of work that need to be accomplished to complete the Watts Bar Unit 2 project on or ahead of schedule.

Corporate Multiplier. In August 2013, the TVA Board approved a corporate multiplier for the WPTIP and EAIP plans. The corporate multiplier ranges between 0 and 1.0 and can be used only in terms of reduction. For 2015, the TVA Board considered the following factors in determining that the corporate multiplier should be 0.95:

• Safety performance which demands improvement;  
 • Strong financial performance driven by O&M efficiency; and  
 • Improved performance of TVA's nuclear, coal-fired, and gas-fired generation units.  
 TVA Corporate Multiplier

Performance Measure	Results Achieved	Target
Safety - Recordable Incident Rate (RIR) <sup>(1)</sup>	0.72	0.00
Total Financing Obligations (TFO) (\$ Billions) <sup>(2)</sup>	\$25.8	\$27.1
Operating Cash Flow (\$ Millions) <sup>(3)</sup>	\$3,315	\$2,482
Net Income (\$ Millions) <sup>(4)</sup>	\$1,111	\$594
Jobs Created and Retained <sup>(5)</sup>	76,220	52,000
Board Level Significant Events <sup>(6)</sup>	0	0
Corporate Multiplier	0.95	

## Notes

(1) Recordable Incident Rate is defined as the number of recordable injuries (as defined by TVA's safety program) per 200,000 employee-hours worked by TVA employees and staff augmentation contractors.

(2) Total Financing Obligations include all statutory debt and other financing obligations.

(3) Operating Cash Flow is the amount of cash generated from power production and other mission-related activities. It is generally defined as operating revenues received less cash payments made for operating expenses.

(4) Net Income consists of the organization's net earnings derived by adjusting revenues for the cost of doing business, including the cost of sales, depreciation, interest, taxes, and other expenses.

(5) Jobs Created and Retained measures the number of new or retained jobs in the Tennessee Valley for which TVA has played a role in the recruitment or retention of the economic development project.

(6) Board Level Significant Events include items deemed materially significant to the TVA Board of Directors and that affect TVA's reputation with its customers and its stakeholders, the organizational health of the workforce, or TVA's impact on the public at large.

Table of Contents

Once scorecard results were calculated and the corporate multiplier was applied, the CEO, after consulting with the TVA Board, made adjustments to the scorecard results for all EAIP participants other than himself and narrowed the range to reflect business units' collaborative efforts to achieve TVA's strategic priorities and business goals. The Chair of the TVA Board, in consultation with the Committee and with input from individual members of the TVA Board, then made identical adjustments to the CEO's scorecard results. The adjusted results for the Named Executive Officers after application of the corporate multiplier and the narrowing adjustments described above are as follows:

## TVA Scorecard Assignment &amp; Results (% of Opportunity Achieved)

Named Executive Officer	Scorecard	Overall Percent of Opportunity Achieved	Corporate Multiplier	Results After Application of Corporate Multiplier and Narrowing of Range
William D. Johnson John M. Thomas, III	Corporate	126.79%	0.95	117%
Charles G. Pardee	Operations	118.05%	0.95	112%
Joseph P. Grimes, Jr.	Nuclear Operations	108.41%	0.95	107%
Michael D. Skaggs	Nuclear Construction	76.79%	0.95	107%

Subjective Individual Assessments. The 2015 EAIP maintained the CEO's discretion to adjust individual incentive awards based on subjective assessments of individual performance during 2015. Once all other preliminary 2015 EAIP payouts were calculated and the corporate multiplier was applied, Mr. Johnson, as CEO, evaluated each Named Executive Officer's performance (except his own) to determine whether any upward or downward adjustment should be made to the final annual incentive award of the participants.

Mr. Johnson, in consultation with the Committee and with input from individual members of the TVA Board, subjectively evaluated the performance of Mr. Pardee and Mr. Thomas as his direct reports during 2015. Mr. Johnson, with input from individual members of the TVA Board, determined that these awards should be paid as set forth above for his direct reports.

Mr. Johnson and Mr. Pardee, TVA's Executive Vice President and Chief Operating Officer (to whom Mr. Grimes reported), subjectively evaluated Mr. Grimes' performance during 2015. Based on this review, Mr. Johnson and Mr. Pardee determined that Mr. Grimes' award should be paid as set forth above.

Mr. Johnson, Mr. Pardee, and Mr. Grimes, TVA's Executive Vice President and Chief Nuclear Officer (to whom Mr. Skaggs reported), subjectively evaluated Mr. Skaggs' performance during 2015. Based on this review, Mr. Johnson, Mr. Pardee, and Mr. Grimes determined that Mr. Skaggs' award should be paid as set forth above.

In addition, the Chair of the TVA Board, in consultation with the Committee and with input from individual members of the TVA Board, evaluated Mr. Johnson's performance as CEO during 2015 to determine whether any adjustment should be made to his incentive award under the EAIP. Based on this review, the Chair of the TVA Board decided that Mr. Johnson's final annual incentive award should be paid as set forth above.

EAIP Payouts. As a result of the above process, the Named Executive Officers were awarded the following EAIP payouts for 2015 in comparison to the 2015 target payouts:





Table of Contents

2015 EAIP Payouts

Named Executive Officers	Salary	Target EAIP Incentive Opportunity (% of Salary)	Target EAIP Payout	Results After Application of Corporate Multiplier and Narrowing of Range	Individual Performance Adjustment	Actual EAIP Payment
William D. Johnson	\$995,000	110%	\$1,094,500	117%	1.00	\$1,280,565
Charles G. Pardee	\$645,000	80%	\$516,000	112%	1.00	\$577,920
John M. Thomas, III	\$575,000	80%	\$460,000	117%	1.00	\$538,200
Joseph P. Grimes, Jr.	\$555,000	80%	\$444,000	107%	1.00	\$475,080
Michael D. Skaggs	\$445,000	70%	\$311,500	107%	1.00	\$333,305

Awards to the Named Executive Officers under the EAIP for 2015 are reported in the "Non-Equity Incentive Plan Compensation" column in the Summary Compensation Table.

Long-Term Incentive Compensation. In addition to the EAIP, certain executives in critical positions, including the Named Executive Officers, participate in the ELTIP. Executives in critical positions make decisions that significantly influence the development and execution of TVA's long-term strategic objectives. The ELTIP is designed to reward executives for helping TVA improve in areas directly related to TVA's long-term success by:

- Using enterprise-wide performance criteria that are directly aligned with TVA's mission;

- Using a "cumulative" performance approach to measure performance achieved over a three-year period with a new three-year performance cycle beginning each year;

- Using a potential payment range of 50 percent to 150 percent of target incentive opportunity to enable awards that are commensurate with performance achievements; and

Targeting award opportunities for each performance cycle at levels that approximate median levels of competitiveness with TVA's peer group and incorporating the Committee's policy that (i) approximately 70 to 80 percent of each executive's total long-term incentive opportunity be performance-based (under the ELTIP) and (ii) approximately 20 to 30 percent of each executive's total long-term incentive opportunity be retention oriented under the Long-Term Deferred Compensation Plan ("LTDCP") or under the Long-Term Retention Incentive Plan ("LTRIP") as described below under the heading "Long-Term Retention Arrangements."

Under the ELTIP, an executive's incentive payment is calculated as follows:

$$\text{ELTIP Payout} = \text{Salary} \times \text{Target ELTIP Incentive Opportunity} \times \text{Percent of Opportunity Achieved}$$

For 2015, the target ELTIP incentive opportunity for each of the Named Executive Officers was as follows:

Named Executive Officers	Target Long-Term Incentive Opportunity*
Mr. Johnson	175%
Mr. Pardee	125%
Mr. Thomas	120%
Mr. Grimes	110%
Mr. Skaggs	90%

\* Represents a percent of each Named Executive Officer's salary.

In November 2014, the TVA Board reviewed the market competitiveness of Mr. Johnson's ELTIP opportunity and increased his opportunity from 150 to 175 percent. See Considerations Specific to Mr. Johnson. Mr. Johnson evaluated the appropriateness of the ELTIP award opportunities for Mr. Pardee, Mr. Thomas, Mr. Grimes, and Mr. Skaggs and made no changes.

Table of Contents

2013 - 2015 Performance Cycle

For the three-year cycle ended September 30, 2015, the TVA Board approved three overall long-term incentive measures of TVA performance to be applied to all participants in the ELTIP:

- Wholesale Rate Excluding Fuel;

- Load Not Served (the product of the percentage of total load-not-served multiplied by the number of minutes in the period); and

- External Measures (including external nuclear performance indicators, stakeholder survey, media tone, and customer loyalty).

The Wholesale Rate Excluding Fuel performance measure represents 12-month averages comparing TVA's rates with those of surveyed regional holding company utilities, with goals that reflect percent gap improvements to achieve top-quartile rates by 2020. The goals approved for the Wholesale Rate Excluding Fuel performance measure for the three-year performance cycle ended September 30, 2015, were as follows:

- The threshold goal was TVA's performance improvement to a 4.69 percent gap relative to the top-quartile of the ELTIP Rates Comparison Group's performance. The ELTIP Rates Comparison Group includes Ameren, American Electric Power, Dominion Resources, Duke Energy, PPL, Entergy, NextEra, and Southern Company.

- The target goal was TVA's performance improvement to a 4.60 percent gap relative to the top-quartile of the ELTIP Rates Comparison Group's performance.

- The maximum goal was TVA's performance improvement to a 4.51 percent gap relative to the top-quartile of the ELTIP Rates Comparison Group's performance.

TVA obtained wholesale rate data (Electric Sales Revenue excluding Fuel/Electric Power Sales) for the ELTIP Rates Comparison Group from the U.S. Energy Information Administration's EIA-826 Monthly Electric Utility Database.

The Load Not Served performance measure was calculated as a percentage of total load not served multiplied by the number of minutes in the period (with the value expressed in system minutes and excluding events during declared major storms) during the three-year cycle ended September 30, 2015, with a threshold goal of 7.8 (99.999 percent reliability), a target goal of 6.0 (75th percentile), and a maximum goal of 4.2 (90th percentile).

The External Measures represent TVA's performance in areas including external nuclear performance indicators, stakeholder survey, media tone, customer loyalty, and Board level significant events. The performance targets were based on incremental improvements leading to median performance in 2015 (threshold), mid second-quartile performance in 2015 (target), and top-quartile performance in 2015 (maximum).

The following table shows the performance goals and weighting and percent of opportunity achieved for the ELTIP for the three-year cycle ended September 30, 2015:

ELTIP Performance Goals, Weighting, and Percent of Opportunity Achieved

Performance Measure	Goals			Performance Achievement				
	Threshold (50%)	Target (100%)	Maximum (150%)	Performance Results	Actual (%)	X	Weight (%)	=

Edgar Filing: Tennessee Valley Authority - Form 10-K

Wholesale Rate	4.69	4.60	4.51	4.69	50.0%	40%	20.0%
Excluding Fuel							
Load Not Served	7.8	6.0	4.2	4.0	150.0%	30%	45.0%
External	77.9	85.8	92.9	88.9	121.7%	30%	36.5%
Measures							
					Overall Percent of Opportunity Achieved		101.5%

Table of Contents

External measures are summarized below:

## External Measures

Performance Measure	Weight	Results Achieved	Threshold	Target	Maximum
Nuclear Performance Index	25%	86.5	83.0	86.0	89.0
Media Tone	25%	92.5	80.5	84.5	85.5
Stakeholder Survey	10%	81.8	81.3	81.8	82.3
Customer Loyalty	10%	60.0	48.5	49.5	50.5
Board Level Significant Events	30%	0.0	Two Unfavorable	Zero	Two Favorable
Composite score for external measures		88.9	77.9	85.8	92.9

As a part of the ELTIP, the TVA Board reserves discretion to review results and peer group comparisons and to approve adjustments in payouts, if appropriate. The TVA Board adjusted the payout for 2015 from 101.5 percent to 113.0 percent based on the following information:

- ▲ Acknowledgment of overall good performance during the performance cycle;
- ♣ Fulfilling TVA's three-year goal to sustainably reduce \$500 million in O&M expense; and
- ♣ Wholesale rate negatively affected by the cold winter.

As a result, the Named Executive Officers were awarded the following ELTIP payouts for the 2013 - 2015 performance cycle in comparison to the 2013 - 2015 performance cycle target payouts:

## 2013 - 2015 Performance Cycle ELTIP Payouts

Named Executive Officers	Salary	Target ELTIP Incentive Opportunity	Target ELTIP Payout	Adjusted Percent of Opportunity Achieved	ELTIP Payout
William D. Johnson	\$995,000	175%	\$1,741,250	113.0%	\$1,967,613
Charles G. Pardee	\$645,000	125%	\$649,515	(1) 113.0%	\$733,952 (1)
John M. Thomas, III	\$575,000	120%	\$690,000	113.0%	\$779,700
Joseph P. Grimes, Jr.	\$555,000	110%	\$423,931	(2) 113.0%	\$479,042 (2)
Michael D. Skaggs	\$445,000	90%	\$400,500	113.0%	\$452,565

## Notes

(1) Mr Pardee's award and target were prorated based on the number of months he was a participant in the plan. For the three-year performance cycle which ended September 30, 2015, Mr. Pardee participated 29 months.

(2) Mr. Grimes' award and target were prorated based on the number of months he was a participant in the plan. For the three-year performance cycle which ended September 30, 2015, Mr. Grimes participated 25 months.

Awards to the Named Executive Officers under the ELTIP for the performance cycle that ended September 30, 2015, are reported in the "Non-Equity Incentive Plan Compensation" column in the Summary Compensation Table.

## 2014 - 2016 Performance Cycle

The TVA Board has approved the following overall measures of TVA performance for all participants in the ELTIP for the three-year cycle ending September 30, 2016 (awards to be paid in November 2016):



Table of Contents

Performance Measure	Weight	Threshold (50%)	Target (100%)	Maximum (150%)
Wholesale Rate Excluding Fuel <sup>(1)</sup>	40%	Target + 2%	2014 Business Plan (2014-2016 Rate)	Target - 2%
Load Not Served <sup>(2)</sup>	30%	(99.999% reliability)	Top Quartile	Top Decile
External Measures <sup>(3)</sup>	30%	78.8	86.7	93.9

## Notes

(1) The Wholesale Rate Excluding Fuel measure represents TVA's electric sales revenue excluding fuel divided by electric power sales. For the 2014-2016 ELTIP performance cycle, the Wholesale Rate Excluding Fuel measure will be calculated using an average of the 2014, 2015, and 2016 results.

(2) Load Not Served is equal to the product of (i) the percentage of total load not served and (ii) the number of minutes in the period (excluding events during

declared major storms). Value is expressed in system minutes and is the average of the three years within the ELTIP performance cycle.

(3) For the 2014-2016 ELTIP performance cycle, the External Measures metric will be calculated using an average of the 2014, 2015, and 2016 results, except for the external performance indicators for the TVA nuclear fleet, which will be based only on 2016 results.

## 2015 - 2017 Performance Cycle

The TVA Board approved the following overall measures of TVA performance for all participants in the ELTIP for the three-year cycle ending September 30, 2017 (awards to be paid in November 2017):

Performance Measure	Weight	Threshold (50%)	Target (100%)	Maximum (150%)
Wholesale Rate Excluding Fuel <sup>(1)</sup>	40%	Target + 2%	2014 & 2015 Business Plan (2015-2017 Rate)	Target - 2%
Load Not Served <sup>(2)</sup>	30%	(99.999% reliability or better)	Top Quartile	Better than top quartile
External Measures <sup>(3)</sup>	30%	79.8	87.7	94.9

## Notes

(1) The Wholesale Rate Excluding Fuel measure represents TVA's electric sales revenue excluding fuel divided by electric power sales. For the 2015-2017 ELTIP performance cycle, the Wholesale Rate Excluding Fuel measure will be calculated using an average of the 2015, 2016, and 2017 results.

(2) Load Not Served is equal to the product of (i) the percentage of total load not served and (ii) the number of minutes in the period (excluding events during declared major storms). Value is expressed in system minutes and is the average of the three years within the ELTIP performance cycle.

(3) For the 2015-2017 ELTIP performance cycle, the External Measures metric will be calculated using an average of the 2015, 2016, and 2017 results, except for the external performance indicators for the TVA nuclear fleet, which will be based only on 2017 results.

**Long-Term Retention Arrangements.** As a corporate agency of the United States, TVA does not have equity securities that provide stock awards, options, or other equity-based awards as compensation for its employees. To help retain leaders, TVA enters into long-term retention arrangements with certain executives, including the Named Executive Officers. These arrangements are typically administered under either the Long-Term Deferred Compensation Plan ("LTDCP") or the Long-Term Retention Incentive Plan ("LTRIP") and provide a retention incentive similar to



restricted stock or restricted stock units. The arrangements are intended to encourage executives to remain with TVA and to provide, in combination with salary and EAIP and ELTIP incentive awards, a competitive level of total direct compensation. Awards under the arrangements are designed to constitute approximately 20 to 30 percent of each Named Executive Officer's total long-term compensation.

LTDCP. Under the LTDCP, credits are made to an account in an executive's name (typically on an annual basis) for a predetermined period. If the executive remains employed at TVA until the end of the period (typically three to five years), the executive becomes vested in the balance of the account, including any return on investment on the credits in the account, and receives a distribution in accordance with a deferral election made at the time the LTDCP agreement was made. The default return on investment on the credits in executives' accounts is interest calculated based on the composite rate of all marketable U.S. Treasury issues, which is credited daily to the balance reflected in the executives' accounts. Executives may alternatively choose to have their balances adjusted based on the return on certain mutual funds.

Credits provided to the Named Executive Officers under LTDCP agreements in 2015 are reported in the "All Other Compensation" column in the Summary Compensation Table. These credits are also reported in the "Registrant Contributions in 2015" column in the Nonqualified Deferred Compensation Table, since the credits were placed in deferred compensation accounts in the Named Executive Officers' names.

LTRIP. Under the LTRIP, awards are granted to participants, and each award represents the right of a participant to receive a lump sum cash payment. On the grant date, the award sets forth a specified date on which the award will become fully vested. The period from the grant date to the vesting date will typically be three years, although it may be as short as two years. Each award will be paid in a lump sum as soon as practical after the vesting date, and no interest will accrue on the award during the vesting period.

Table of Contents

Grants provided to the Named Executive Officers under LTRIP arrangements in 2015 are reported in the “All Other Compensation” column in the Summary Compensation Table.

**Other Retention Incentive Arrangement.** TVA entered into a retention incentive arrangement ("RIA") with Mr. Thomas as of January 1, 2015. Under this arrangement, Mr. Thomas will be eligible to receive \$200,000 as long as he remains employed with TVA on December 31, 2015, performs all duties in a highly effective manner, and maintains satisfactory performance through the end of the retention period. If these conditions are satisfied, the retention incentive award will be paid to Mr. Thomas within 30 days following the end of the retention period and will be reported in the “All Other Compensation” column in the 2016 Summary Compensation Table.

**Total Direct Compensation.** Total direct compensation (salary, annual and long-term incentive, long-term retention, and long-term deferred compensation) is targeted at the median (50th percentile) level for similar positions at companies in TVA's peer group or above the median (50th to 75th percentile) for positions affected by market scarcity, recruitment and retention issues, and other business reasons.

**Considerations Specific to Mr. Johnson.** At the beginning of 2015, the Committee, in consultation with its independent executive compensation consultant, Towers Watson, evaluated Mr. Johnson's overall performance and then-current compensation relative to TVA's peer group to determine whether to recommend adjustments to Mr. Johnson's compensation to the TVA Board for 2015. After a thorough review, including the consideration of chief executive officer median compensation data provided to the Committee by Towers Watson based on TVA's peer group, the Committee recommended that the TVA Board approve compensation and incentive opportunity changes for Mr. Johnson for 2015. The 2015 compensation package for Mr. Johnson consisted of the following components: annual salary of \$995,000, a target EAIP incentive opportunity of 110 percent of salary, a target ELTIP incentive opportunity of 175 percent of salary, a \$300,000 credit under an LTDCP agreement, a \$450,000 LTRIP award, and an award of up to \$325,000 under a performance arrangement (described in Other Arrangements below). The Committee made its recommendation based on the special place and mission of TVA and the belief that Mr. Johnson's compensation should be placed at greater risk than any other TVA executive (approximately 65 percent of overall target compensation).

The chart below compares (i) the total direct compensation earned by Mr. Johnson for 2015; (ii) the 2015 compensation opportunity approved by the TVA Board for Mr. Johnson; and (iii) the chief executive officer median compensation data provided to the Committee by Towers Watson, based on TVA's peer group as discussed above.

CEO Peer Group Compensation Comparison

Compensation Component	TVA CEO (Johnson) Compensation Earned for 2015	TVA CEO (Johnson) Compensation Opportunity for 2015	2015 Towers Watson Chief Executive Officer Median Market Data (TVA Peer Group) <sup>(1)</sup>
Base Salary	\$995,000	\$995,000	\$1,180,000
Total Annual Incentive	128.7	% <sup>(2)</sup> 110 (target)	% <sup>(2)</sup> 112.5 (target)
Total Cash Compensation	\$2,275,565	\$2,089,500	\$2,510,000
Total Long-Term Incentive Compensation	197.8	% <sup>(3)</sup> 175 (target)	% <sup>(3)</sup> 450 (target)
Total Direct Compensation	\$5,318,178	<sup>(4)</sup> \$4,905,750	<sup>(4)</sup> \$7,820,000

Notes

(1) Market assessment effective October 2014.

(2) Mr. Johnson's target EAIP award for 2015 was 110 percent of \$995,000, and his actual award was 117 percent of this amount.

(3) For the 2013-2015 ELTIP performance cycle, Mr. Johnson's target ELTIP award was 175 percent of \$995,000, and his actual award was 113 percent of this amount.

(4) Includes an annual credit of \$300,000 provided under a January 2013 LTDCP agreement, a \$450,000 LTRIP award, and an award of up to \$325,000 provided under an additional performance based arrangement. In 2015, Mr. Johnson received the maximum award of \$325,000.

Retirement Benefits. The TVA Retirement System administers three retirement benefit structures for eligible employees:

• Original Benefit Structure ("OBS") for employees covered under the plan prior to January 1, 1996, with a pension based on a final average pay formula.

Table of Contents

Cash Balance Benefit Structure ("CBBS") for employees first hired on or after January 1, 1996, and prior to July 1, 2014, with a pension based on an account that receives pay credits equal to 6 percent of compensation plus interest.

Employer Automatic Benefit Structure ("EABS") for employees who are first hired on or after July 1, 2014, or who are rehired on or after July 1, 2014, but who were previously not vested or who previously received their pension benefit in a lump-sum distribution. EABS members are eligible for a defined contribution retirement benefit in the 401(k) plan only and are not eligible to participate in the defined benefit plan.

In addition to these plans, TVA also offers a 401(k) plan which provides for the following benefits:

For OBS members, TVA provides matching contributions of 25 cents on every dollar up to 1.5 percent of eligible compensation.

For CBBS members, TVA provides matching contributions of 75 cents on every dollar up to 4.5 percent of eligible compensation.

For EABS members, TVA provides an automatic, non-elective contribution of 4.5 percent of eligible compensation and matching contributions of 75 cents on every dollar up to 4.5 percent of eligible compensation.

The availability of, and level of benefits provided by, these qualified plans are comparable to similar qualified plans provided by companies in TVA's peer group.

In addition to its qualified retirement plans, TVA has a Supplemental Executive Retirement Plan ("SERP") for selected executives who are critical to the ongoing success of the enterprise. TVA's SERP is a non-qualified plan similar to those used by most other companies in its peer group. The purpose of the SERP is to:

Provide a competitive retirement benefit level that cannot be delivered solely through TVA's qualified retirement plans due to IRS limitations.

Provide a benefit level (as a percentage replacement of pre-retirement pay) that is more comparable to that of employees who are not subject to the IRS limitations.

Because "compensation" as calculated for purposes of the SERP benefit includes EAIP awards earned by the participants, the SERP benefits are somewhat sensitive to TVA's performance achievements. Also, discretionary actions by the TVA Board or the CEO to reduce EAIP payouts could reduce SERP benefits.

More information regarding these retirement and pension plans is found following the Pension Benefits Table.

Perquisites. TVA did not provide perquisites to the Named Executive Officers in 2015.

Health and Other Benefits. TVA offers a group of health and other benefits (medical, dental, vision, life and accidental death and disability insurance, and long-term disability insurance) that are available to a broad group of employees. The Named Executive Officers are eligible to participate in TVA's health benefit plans and other non-retirement benefit plans on the same terms and at the same contribution rates as other TVA employees.

Other Arrangements. Three NEOs have arrangements which provide opportunities for additional compensation.

Mr. Johnson, upon appointment as CEO, has an arrangement approved by the TVA Board under which he would be eligible to receive an additional performance award of up to \$325,000 per year based on the evaluation of his

performance, which may be subjective and/or based on the achievement of defined short- and/or long-term goals. Under the arrangement, the TVA Board delegated to its Chair, in consultation with the Committee and with input from individual members of the TVA Board, the authority to set and approve any goals and the periods of performance for any such goals, evaluate the performance of Mr. Johnson subjectively and/or with respect to any goals, and approve any awards to Mr. Johnson. The Chair's evaluation confirmed that Mr. Johnson delivered strong results in his third year as CEO. Based on Mr. Johnson's demonstrated leadership and accomplishments during 2015, the Chair approved an award to Mr. Johnson of \$325,000 for 2015 under the performance arrangement.

Mr. Skaggs operates under a CEO-approved arrangement that will provide Mr. Skaggs a performance award in the amount of \$300,000 if the Watts Bar Nuclear Unit 2 project is completed on or ahead of schedule and on or under budget as defined by the "Watts Bar Unit 2 Project Completion Plan," as long as Mr. Skaggs remains in a position

Table of Contents

responsible for completion of the project. As of September 30, 2015, TVA had determined that no award would be paid under this arrangement.

Mr. Pardee has a CEO-approved arrangement that provides additional awards of up to \$200,000 per year based on the evaluation of performance that may be subjective and/or based on achievement of defined short-term and/or long-term goals. Under this arrangement, the President and CEO may set and approve goals and the periods of performance for such goals, evaluate performance subjectively and/or with respect to any goals, and approve any award. Mr. Johnson confirmed that Mr. Pardee delivered strong results in 2015. Based on this analysis, Mr. Johnson approved an award to Mr. Pardee of \$200,000 for 2015 under the performance arrangement.

## Executive Compensation Tables and Narrative Disclosures

## Summary Compensation and Grants of Plan-Based Awards

The following table provides information on compensation earned by each of the Named Executive Officers in 2015 (and 2014 and 2013, as applicable).

## Summary Compensation Table

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$)	Option Awards (\$)	Non-Equity Incentive Plan Compensation (\$) <sup>(1)</sup>	Change in Pension Value and Nonqualified Deferred Compensation Earnings (\$) <sup>(2)</sup>	All Other Compensation (\$) <sup>(3)</sup>	Total (\$)
William D. Johnson President and Chief Executive Officer	2015	\$998,827	—	—	—	\$3,573,178	\$1,068,264	\$761,700	\$6,401,969
	2014	\$950,000	—	—	—	\$2,918,500 <sup>(4)</sup>	\$435,830 <sup>(5)</sup>	\$311,475	\$4,615,805
	2013	\$712,500	—	—	—	\$2,992,386 <sup>(6)</sup>	\$2,063,395 <sup>(7)</sup>	\$461,250	\$6,229,531
Charles G. Pardee Executive Vice President and Chief Operating Officer	2015	\$647,481	—	—	—	\$1,511,872	\$415,889	\$400,000	\$2,975,242
	2014	\$609,039	—	—	—	\$1,164,875 <sup>(8)</sup>	\$424,644 <sup>(9)</sup>	\$211,475	\$2,410,033
	2013	\$—	—	—	—	\$—	\$—	\$—	\$—
John M. Thomas, III Executive Vice President and Chief Financial Officer	2015	\$577,212	—	—	—	\$1,317,900	\$306,185	\$411,700	\$2,612,997
	2014	\$539,038	—	—	—	\$1,201,200 <sup>(10)</sup>	\$349,173 <sup>(11)</sup>	\$211,475	\$2,300,886
	2013	\$522,000	—	—	—	\$1,285,648 <sup>(12)</sup>	\$161,119 <sup>(13)</sup>	\$172,500	\$2,141,267
Joseph P. Grimes, Jr. Executive Vice President and Chief Nuclear Officer	2015	\$557,135	—	—	—	\$954,122	\$268,994	\$311,700	\$2,091,951
	2014	\$535,152	—	—	—	\$729,317 <sup>(14)</sup>	\$16,907 <sup>(15)</sup>	\$311,475	\$1,592,851
	2013	\$—	—	—	—	\$—	\$—	\$—	\$—
Michael D. Skaggs	2015	\$446,712	—	—	—	\$785,870	\$503,274	\$311,700	\$2,047,556
	2014	\$425,535	—	—	—	\$744,942 <sup>(16)</sup>	\$732,916 <sup>(17)</sup>	\$186,475	\$2,089,868

Edgar Filing: Tennessee Valley Authority - Form 10-K

Senior Vice

President,

Watts Bar Nuclear

Operations and

Construction

2013 \$416,596 — — — \$785,703 <sup>(18)</sup> \$212,967 <sup>(19)</sup> \$ 197,500 \$1,612,766

Notes

(1) The column includes the amounts below for 2015.

Non-Equity Incentive Plan Compensation

	William D. Johnson	Charles G. Pardee	John M. Thomas, III	Joseph P. Grimes, Jr.	Michael D. Skaggs
EAIP	\$1,280,565	\$577,920	\$538,200	\$475,080	\$333,305
ELTIP	\$1,967,613	\$733,952	\$779,700	\$479,042	\$452,565
PIA	\$325,000	\$200,000	\$0	\$0	\$0
Total	\$3,573,178	\$1,511,872	\$1,317,900	\$954,122	\$785,870

168

---

Table of Contents

(2) This column includes the amounts listed below for 2015.

## Change in Pension Value and Nonqualified Deferred Compensation Earnings

	William D. Johnson	Charles G. Pardee	John M. Thomas, III	Joseph P. Grimes, Jr.	Michael D. Skaggs
Increase under CBBS	\$17,844	\$19,300	\$28,797	\$17,865	\$38,269
Increase under SERP	\$1,050,420	\$396,589	\$277,388	\$251,129	\$465,005
Total	\$1,068,264	\$415,889	\$306,185	\$268,994	\$503,274

(3) This column includes the amounts listed below for 2015.

## All Other Compensation

	William D. Johnson	Charles G. Pardee	John M. Thomas, III	Joseph P. Grimes, Jr.	Michael D. Skaggs
LTDCP Credit	\$300,000	\$200,000	\$0	\$150,000	\$150,000
LTRIP Credit	\$450,000	\$200,000	\$400,000	\$150,000	\$150,000
401(k) Matching Contribution	\$11,700	\$0	\$11,700	\$11,700	\$11,700
Other	\$0	\$0	\$0	\$0	\$0
Total	\$761,700	\$400,000	\$411,700	\$311,700	\$311,700

(4) Represents \$1,168,500 awarded under the EAIP, \$1,425,000 awarded under the ELTIP, and \$325,000 awarded under a performance incentive arrangement.

(5) Reflects increases of \$22,219 under the CBBS and \$413,611 under the SERP.

(6) Represents \$805,766 awarded under the EAIP, \$1,861,620 awarded under the ELTIP, and \$325,000 awarded under a performance incentive arrangement.

(7) Reflects increases of \$12,066 under the CBBS and \$2,051,329 under the SERP.

(8) Represents \$598,920 awarded under the EAIP, \$365,955 awarded under the ELTIP, and \$200,000 awarded under a performance incentive arrangement.

(9) Reflects increases of \$18,979 under the CBBS and \$405,665 under the SERP.

(10) Represents \$541,200 awarded under the EAIP and \$660,000 awarded under the ELTIP.

(11) Reflects an increase of \$41,205 under the CBBS and \$307,968 under the SERP.

(12) Represents \$470,454 awarded under the EAIP and \$815,194 awarded under the ELTIP.

(13) Reflects a decrease of \$16,374 under the CBBS and an increase of \$177,493 under the SERP.

(14) Represents \$516,810 awarded under the EAIP and \$212,507 awarded under the ELTIP.

(15) Reflects an increase of \$16,907 under the SERP.

(16) Represents \$356,502 awarded under the EAIP and \$388,440 under the ELTIP.

(17) Reflects an increase of \$59,147 under the CBBS and \$673,769 under the SERP.

(18) Represents \$297,763 awarded under the EAIP and \$487,940 awarded under the ELTIP.

(19) Reflects a decrease of \$18,824 under the CBBS and an increase of \$231,791 under the SERP.



Table of Contents

The following table provides information on non-equity incentive plan awards and the possible range of payouts associated with incentives the Named Executive Officers were eligible to receive in the performance cycles ended on September 30, 2015.

## Grants of Plan-Based Awards Table

Name	Plan	Estimated Possible Payouts Under Non-Equity Incentive Plan Awards <sup>(1)</sup>		
		Threshold <sup>(2)</sup> (\$)	Target <sup>(2)</sup> (\$)	Maximum <sup>(2)</sup> (\$)
William D. Johnson	EAIP <sup>(3)</sup>	\$547,250	\$1,094,500	\$1,641,750
	ELTIP <sup>(4)</sup>	\$870,625	\$1,741,250	\$2,611,875
	PIA <sup>(7)</sup>	\$0	\$0	\$325,000
Charles G. Pardee	EAIP <sup>(3)</sup>	\$258,000	\$516,000	\$774,000
	ELTIP <sup>(4),(5)</sup>	\$324,758	\$649,515	\$974,273
	PIA <sup>(8)</sup>	\$0	\$0	\$200,000
John M. Thomas, III	EAIP <sup>(3)</sup>	\$230,000	\$460,000	\$690,000
	ELTIP <sup>(4)</sup>	\$345,000	\$690,000	\$1,035,000
Joseph P. Grimes, Jr.	EAIP <sup>(3)</sup>	\$222,000	\$444,000	\$666,000
	ELTIP <sup>(4),(6)</sup>	\$211,966	\$423,931	\$635,897
Michael D. Skaggs	EAIP <sup>(3)</sup>	\$155,750	\$311,500	\$467,250
	ELTIP <sup>(4)</sup>	\$200,250	\$400,500	\$600,750

## Notes

(1) TVA does not have any equity securities and therefore has no equity-based awards.

(2) Threshold, Target, and Maximum represent amounts that could be earned by an NEO based on performance during the applicable performance cycle.

(3) Target incentive opportunities as a percentage of salaries were as follows: Mr. Johnson, 110 percent; Mr. Pardee, 80 percent; Mr. Thomas, 80 percent; Mr. Grimes, 80 percent; and Mr. Skaggs, 70 percent. Actual EAIP awards earned for performance in 2015 are reported for each of the Named Executive Officers under “Non-Equity Incentive Plan Compensation” in the Summary Compensation Table. See Compensation Discussion and Analysis for a discussion of how each award was determined.

(4) Target incentive opportunities for the three-year performance cycle ended September 30, 2015, as a percentage of salaries were as follows: Mr. Johnson, 175 percent; Mr. Pardee, 125 percent; Mr. Thomas, 120 percent; Mr. Grimes, 110 percent; and Mr. Skaggs, 90 percent. ELTIP performance measures for the three-year cycle ended September 30, 2015, were Wholesale Rate Excluding Fuel, Load Not Served, and External Measures. Actual ELTIP awards earned for the performance cycle ended on September 30, 2015, are reported for each of the Named Executive Officers under “Non-Equity Incentive Plan Compensation” in the Summary Compensation Table. See Compensation Discussion and Analysis for a discussion of how each award was determined.

(5) Mr. Pardee's estimated possible payout under the ELTIP for the performance period ended September 30, 2015, is prorated based on the number of months he was a participant in the performance cycle (29). Accordingly, his possible payouts under the ELTIP are \$324,758 for threshold ( $\$403,125 \times 29/36$ ), \$649,515 for target ( $\$806,250 \times 29/36$ ), and \$974,273 for maximum ( $\$1,209,375 \times 29/36$ ).

(6) Mr. Grimes' estimated possible payout under the ELTIP for the performance period ended September 30, 2015, is prorated based on the number of months he was a participant in the performance cycle (25). Accordingly, his possible payouts under the ELTIP are \$211,966 for threshold ( $\$305,250 \times 25/36$ ), \$423,931 for target ( $\$610,500 \times 25/36$ ), and \$635,897 for maximum ( $\$915,750 \times 25/36$ ).

(7) Reflects the maximum award amount Mr. Johnson was eligible to receive under a performance incentive arrangement described in Compensation Discussion and Analysis - Executive Compensation Program Components - Other Arrangements. The actual award to be paid to Mr. Johnson is reported under "Non-Equity Incentive Plan Compensation" in the Summary Compensation Table.

(8) Reflects the maximum award amount Mr. Pardee was eligible to receive under a performance incentive arrangement described in Compensation Discussion and Analysis - Executive Compensation Program Components - Other Arrangements. The actual award to be paid to Mr. Pardee is reported under "Non-Equity Incentive Plan Compensation" in the Summary Compensation Table.

Table of Contents

Awards under the EAIP, ELTIP, and PIA will be paid in cash during the first quarter of 2016.

## Long-Term Retention Arrangements

The following table summarizes the LTDCP, LTRIP, and RIA arrangements with the Named Executive Officers. See also the Nonqualified Deferred Compensation Table below for additional information regarding the amounts credited under LTDCP agreements.

## Long-Term Retention Agreements

Name	Plan	Amount	Date of Grant or Credit	Vesting Date
William D. Johnson	LTDCP	\$300,000 <sup>(1)</sup>	January 1, 2013	September 30, 2013
	LTDCP	\$300,000 <sup>(1)</sup>	October 1, 2013	September 30, 2014
	LTDCP	\$300,000 <sup>(1)</sup>	October 1, 2014	September 30, 2015
	LTRIP	\$450,000 <sup>(2)</sup>	November 10, 2014	December 31, 2016
Charles G. Pardee	LTDCP	\$200,000 <sup>(3)</sup>	May 1, 2013	December 31, 2016
	LTDCP	\$200,000 <sup>(3)</sup>	January 1, 2014	December 31, 2016
	LTDCP	\$200,000 <sup>(3)</sup>	January 1, 2015	December 31, 2016
	LTDCP	\$200,000 <sup>(3)</sup>	January 1, 2016	December 31, 2016
	LTRIP	\$200,000 <sup>(2)</sup>	January 1, 2015	December 31, 2017
John M. Thomas, III	LTDCP	\$50,000 <sup>(4)</sup>	October 1, 2010	September 30, 2013
	LTDCP	\$100,000 <sup>(4)</sup>	October 1, 2011	September 30, 2013
	LTDCP	\$100,000 <sup>(4)</sup>	October 1, 2012	September 30, 2013
	LTDCP	\$50,000 <sup>(4)</sup>	May 1, 2013	April 30, 2014
	LTDCP	\$200,000 <sup>(4)</sup>	March 1, 2014	December 31, 2014
	RIA	\$200,000 <sup>(5)</sup>	January 1, 2015	December 31, 2015
	LTRIP	\$200,000 <sup>(2)</sup>	January 1, 2015	December 31, 2016
	LTRIP	\$200,000 <sup>(2)</sup>	January 1, 2015	December 31, 2017
Joseph P. Grimes, Jr.	LTDCP	\$250,000 <sup>(6)</sup>	September 1, 2013	December 31, 2015
	LTDCP	\$150,000 <sup>(6)</sup>	January 1, 2014	December 31, 2015
	LTDCP	\$150,000 <sup>(6)</sup>	January 1, 2015	December 31, 2015
	LTRIP	\$150,000 <sup>(2)</sup>	June 1, 2014	December 31, 2016
	LTRIP	\$150,000 <sup>(2)</sup>	January 1, 2015	December 31, 2017
Michael D. Skaggs	LTDCP	\$100,000 <sup>(7)</sup>	October 1, 2012	September 30, 2014
	LTDCP	\$100,000 <sup>(7)</sup>	October 1, 2013	September 30, 2014
	LTDCP	\$50,000 <sup>(8)</sup>	March 1, 2013	December 31, 2016
	LTDCP	\$50,000 <sup>(8)</sup>	January 1, 2014	December 31, 2016
	LTDCP	\$150,000 <sup>(8)</sup>	January 1, 2015	December 31, 2016
	LTDCP	\$150,000 <sup>(8)</sup>	January 1, 2016	December 31, 2016
	LTRIP	\$150,000 <sup>(2)</sup>	January 1, 2015	December 31, 2017

## Notes

(1) Each credit, and earnings on such credit, were distributed to Mr. Johnson in a lump sum at the time of vesting.

(2) All LTRIP awards shall be paid in a lump sum as soon as practical following the earliest to occur (a) the normal vesting date, (b) the participant's death, (c) the participant's disability, or (d) the participant's involuntary termination from TVA for reason other than cause, but in no event shall such payment be made later than March 15 of the calendar year following the vesting date. The award shall be paid in cash after deducting the applicable federal, state, and local withholding taxes.

(3) Mr. Pardee will vest in these credits only if he remains employed by TVA until the expiration of the LTDCP agreement on December 31, 2016. All vested credits, and earnings on such credits, will be distributed to him in five annual installments following his separation from service with TVA. In the event TVA terminates Mr. Pardee's employment during the term of a LTDCP agreement through no act or delinquency of his own, any credits under the agreement and earnings on such credits in Mr. Pardee's account at the time of termination will become vested and distributed to him in five annual installments. If Mr. Pardee voluntarily terminates his employment or TVA terminates Mr. Pardee's employment for cause prior to the expiration of the agreement, then all credits under the agreement, and earnings on such credits, in Mr. Pardee's account may be forfeited.

Table of Contents

(4) The LTDCP grants included in the table are contained in three different agreements. Under each agreement, all credits and earnings on credits were paid out in a lump sum upon vesting.

(5) TVA entered into a retention incentive arrangement with Mr. Thomas as of January 1, 2015. Under this arrangement, Mr. Thomas will be eligible to receive \$200,000 as long as he remains employed with TVA on December 31, 2015, performs all duties in a highly effective manner, and maintains satisfactory performance through the end of the retention period. If these conditions are satisfied, the retention incentive award will be paid to Mr. Thomas within 30 days following the end of the retention period.

(6) Mr. Grimes will vest in these credits only if he remains employed by TVA until the expiration of the LTDCP agreement on December 31, 2015. All vested credits, and earnings on such credits, will be distributed to him in a lump sum following his separation from service with TVA. In the event TVA terminates Mr. Grimes' employment during the term of a LTDCP agreement through no act or delinquency of his own, any credits under the agreement and earnings on such credits in Mr. Grimes' account at the time of termination will become vested and distributed to him in a lump sum. If Mr. Grimes voluntarily terminates his employment or TVA terminates Mr. Grimes' employment for cause prior to the expiration of the agreement, then all credits under the agreement, and earnings on such credits, in Mr. Grimes' account may be forfeited.

(7) Mr. Skaggs vested in these credits on September 30, 2014. Credits, and earnings on such credits, will be distributed to Mr. Skaggs in ten annual installments upon separation of service.

(8) Mr. Skaggs will vest in these credits only if he remains employed by TVA in a position responsible for the completion of Watts Bar Unit 2 until the expiration of the LTDCP agreement on December 31, 2016. All vested credits, and earnings on such credits, will be distributed to him in ten annual installments following his separation from service with TVA. In the event TVA terminates Mr. Skaggs' employment during the term of the agreement through no act or delinquency of his own, any credits under the agreement and earnings on such credits in Mr. Skaggs' account at the time of termination will become vested and distributed to him in ten annual installments. If Mr. Skaggs voluntarily terminates his employment or TVA terminates Mr. Skaggs' employment for cause prior to the expiration of the agreement, then all credits under the agreement, and earnings on such credits, in Mr. Skaggs' account may be forfeited.

## Retirement and Pension Plans

The table below provides the actuarial present value of the Named Executive Officers' accumulated benefits, including the number of years of credited service, under TVA's retirement and pension plans as of September 30, 2015, determined using a methodology and interest rate and mortality rate assumptions consistent with those used in the financial statements in this Annual Report, set forth in Note 21.

## Pension Benefits Table

Name	Plan Name	Number of Years of Credited Service <sup>(1)</sup> (#)	Present Value of Accumulated Benefit (\$)	Payments During Last Year (\$)
William D. Johnson	Qualified Plan – CBBS	2.750	<sup>(2)</sup> \$52,129	\$0
	Non-Qualified – SERP Tier	17.750	<sup>(2)</sup> \$3,515,360	\$0
Charles G. Pardee	Qualified Plan – CBBS	2.417	<sup>(3)</sup> \$54,720	\$0
	Non-Qualified – SERP Tier	17.417	<sup>(3)</sup> \$1,439,976	\$0
John M. Thomas, III	Qualified Plan – CBBS	9.833	\$239,139	\$0
	Non-Qualified – SERP Tier	19.833	\$1,651,614	\$0
Joseph P. Grimes, Jr.	Qualified Plan – CBBS	2.083	\$38,047	\$0
	Non-Qualified – SERP Tier	12.083	\$270,156	\$0
Michael D. Skaggs	Qualified Plan – CBBS	21.583	\$490,746	\$0

Non-Qualified – SERP Tier 1	21.583	\$3,010,982	\$0
-----------------------------	--------	-------------	-----

## Notes

(1) Limited to 24 years when determining supplemental benefits available under SERP Tier 1, described below.

(2) Mr. Johnson has been granted five additional years of credited service for pre-TVA employment, and the offset for prior employer pension benefits associated with the additional five years of credited service has been waived. In addition, the offset for benefits provided under TVA's defined benefit plan will be calculated based on the benefit he would be eligible to receive as a participant in the CBBS taking into account the additional years of credited service being used for SERP benefit calculation purposes. As of September 30, 2015, the present value of this benefit was \$3,515,360. Without the additional years of credited service, the present value of Mr. Johnson's accumulated benefit would be \$1,246,442.

(3) Mr. Pardee has been granted five additional years of credited service for pre-TVA employment, and the offset for prior employer pension benefits associated with the additional five years of credited service has been waived. In addition, the offset for benefits provided under TVA's defined benefit plan will be calculated based on the benefit he would be eligible to receive as a participant in the CBBS taking into account the additional years of credited service being used for SERP benefit calculation purposes. As of September 30, 2015, the present value of this benefit was \$1,439,976. Without the additional years of credited service, the present value of Mr. Pardee's accumulated benefit would be \$328,983.

## Qualified Retirement Plans

TVA sponsors a qualified defined benefit plan and a qualified defined contribution 401(k) plan which are administered by the Tennessee Valley Authority Retirement System ("TVARS"). The retirement benefits have three structures — the OBS, the CBBS, and the EABS. Participation in the OBS is limited to employees who were hired prior to January 1, 1996. All employees first hired by TVA on or after January 1, 1996, and prior to July 1, 2014, participate in the CBBS. All employees first hired by TVA on or after July 1, 2014, or rehired by TVA on or after July 1, 2014, but who were previously not vested or who previously received their pension benefit in a lump-sum distribution, participate in the EABS, which provides for a defined contribution retirement benefit in the 401(k) plan only. TVARS rules and IRS regulations set limits on employee and employer contributions and compensation that can be counted in benefit calculations.

CBBS. All Named Executive Officers are members of the CBBS, under which each member has a cash balance account that receives pay credits equal to six percent of compensation each pay period (every two weeks). For executives who are members of the CBBS, compensation is defined as annual salary only for benefit calculation purposes and is shown under

## Table of Contents

the column titled "Salary" in the Summary Compensation Table. The compensation in 2015 could not exceed \$265,000 pursuant to the IRS annual compensation limit applicable to qualified plans. The account is credited with interest each month, and interest is compounded on an annual basis. The annual interest rate used for interest credits is determined each January 1. The interest rate is three percent greater than the percentage increase in the 12-month average of the Consumer Price Index for the period ended on the previous October 31. The minimum interest rate is six percent and the maximum interest rate is 10 percent unless the TVARS Board of Directors, with TVA's approval, selects a higher interest rate. When a member elects to begin receiving retirement benefits, the cash balance account is converted to a monthly pension payment by dividing the ending value of the cash balance account by a conversion factor set forth in the plan based on the member's actual age in years and months.

Members with at least five years of CBBS service are eligible to receive an immediate benefit. CBBS service is the length of time spent as a member of the TVA Retirement System and does not include credit for unused sick leave, forfeited annual leave, or pre-TVA employment military service. The CBBS does not provide for early retirement benefits to any Named Executive Officer or any other member in the CBBS.

OBS. None of the Named Executive Officers is a member of the OBS.

EABS. None of the Named Executive Officers is a member of the EABS.

## Supplemental Executive Retirement Plan

The SERP is a non-qualified defined benefit pension plan similar to those typically found in other companies in TVA's peer group and is provided to a limited number of executives, including the Named Executive Officers. TVA's SERP was created to recruit and retain key executives. The plan is designed to provide a competitive level of retirement benefits in excess of the limitations on contributions and benefits imposed by TVA's qualified defined benefit plan and Internal Revenue Code Section 415 limits on qualified retirement plans.

The SERP provides two distinct levels of participation, Tier 1 and Tier 2. Each participant is assigned to one of the two tiers at the time he or she is approved to participate in the SERP. The level of participation ("Tier") defines the level of retirement benefits under the SERP at the time of retirement.

Under the SERP, normal retirement eligibility is age 62 with five years of vesting service. No vested and accrued benefits are payable prior to age 55, and benefits are reduced for retirements prior to age 62. The level of reduction in benefits for retirements prior to age 62 depends on whether a participant's termination is "approved" or "unapproved." In the event of an approved termination of TVA employment, any vested and accrued benefits are reduced by 5/12 percent for each month that the date of benefit commencement precedes the participant's 62nd birthday, up to a maximum reduction of 35 percent. In the event of an unapproved termination of TVA employment, the participant's accrued benefits are first subject to a reduced percentage of vesting if the participant's years of service are between five and ten. At five years of vesting service, the vested percentage of retirement benefits is 50 percent and increases thereafter by 10 percent for each full additional year of service, reaching 100 percent vesting for ten or more years of vesting service. Thereafter, any vested and accrued benefits are reduced by 10/12 percent for each month that the date of benefit commencement precedes the participant's 62nd birthday up to a maximum reduction of 70 percent.

For purposes of the SERP, an "approved" termination means termination of employment with TVA due to (i) retirement on or after the participant's 62nd birthday, (ii) retirement on or after attainment of actual age 55, if such retirement has the approval of the TVA Board or its delegate, (iii) death in service as an employee, (iv) disability (as defined under the Rules and Regulations of the TVA Retirement System) as determined by the Retirement Committee, or (v) any other circumstance approved by the TVA Board or its delegate. For purposes of the SERP, an "unapproved" termination means a termination of employment with TVA when such termination does not constitute an "approved"

termination as defined in the preceding sentence.

SERP Tier 1. All of the Named Executive Officers are participants in Tier 1. The Tier 1 structure is designed to replace 60 percent of the amount of a participant's compensation at the time the participant reaches age 62 and has accrued 24 years of TVA service.

Tier 1 benefits are based on a participant's highest average compensation during three consecutive SERP years and a pension multiple of 2.5 percent for each year of credited service up to a maximum of 24 years. Compensation is defined as salary and EAIP for benefit calculation purposes. Tier 1 benefits are offset by Social Security benefits, benefits provided under TVA's defined benefit plan, and prior employer pension benefits when applicable.

#### The TVA Sponsored 401(k) Plan

Members of the TVA Retirement System, including the Named Executive Officers, may elect to participate in the TVA Retirement System's 401(k) plan on a before-tax, after-tax, and/or Roth basis. For OBS members, TVA provides a matching contribution of \$0.25 on every dollar contributed on a before-tax, after-tax, and/or Roth basis, up to 1.5 percent of the



Table of Contents

participant's annual salary. For CBBS members, TVA provides a matching contribution of \$0.75 on every dollar contributed on a before-tax, after-tax, and/or Roth basis, up to 4.5 percent of the participant's annual salary. For EABS members, TVA provides an automatic, non-elective contribution of 4.5 percent of eligible compensation and matching contributions of 75 cents on every dollar up to 4.5 percent of eligible compensation. Any eligible member must have three years of TVA service to be vested in matching contributions and any employer automatic contributions from TVA.

## Nonqualified Deferred Compensation

The following table provides information regarding deferred contributions, earnings, and balances for each of the Named Executive Officers. The amounts reported under this table do not represent compensation in addition to the compensation that was earned in 2015 and already reported in the Summary Compensation Table, but rather the amounts of compensation earned by the Named Executive Officers in 2015 or prior years that were or have been deferred.

## Nonqualified Deferred Compensation Table

Name	Executive Contributions in 2015 (\$)	Registrant Contributions in 2015 (\$)	Aggregate Earnings in 2015 <sup>(1)</sup> (\$)	Aggregate Withdrawals/ Distributions (\$)	Aggregate Balance at September 30 2015 <sup>(2)</sup> (\$)
William D. Johnson	\$0	\$300,000	\$6,028	\$306,060	\$305,994
Charles G. Pardee	\$0	\$200,000	\$11,253	\$0	\$619,660
John M. Thomas, III	\$0	\$0	\$1,070	\$203,452	\$0
Joseph P. Grimes, Jr.	\$0	\$150,000	\$1,155	\$0	\$558,633
Michael D. Skaggs	\$0	\$150,000	\$46,491	\$0	\$3,801,856

## Notes

(1) Includes vested and unvested earnings. Because none of the amounts is above market earnings under SEC rules, none of these amounts are included in the Summary Compensation Table.

(2) Includes vested and unvested contributions and earnings.

TVA normally allows participants in the EAIP, ELTIP, and LTDCP to defer all or a portion of the compensation earned under those plans and eligible for deferral under plan terms and IRS regulations. All deferrals are credited to each participant in a deferred compensation account, and the deferral amounts are then funded into a rabbi trust. Each participant may elect one or more investment options made available by TVA or allow some or all funds to accrue interest at the rate established by the beginning of each fiscal year equal to the composite rate of all Treasury issues. Participants may elect to change from either one notional investment option or the TVA interest bearing option to another at any time. Upon termination, funds are distributed pursuant to elections made in accordance with applicable IRS regulations.

Participants in the EAIP and ELTIP, including the Named Executive Officers, were not allowed to elect to defer any portion of their awards received under the plans for 2015.

Table of Contents

## Potential Payments on Account of Retirement/Resignation, Termination without Cause, Termination with Cause, Death or Disability

The tables below show certain potential payments that would have been made to each Named Executive Officer if his employment had been terminated on September 30, 2015, under various scenarios. All of the Named Executive Officers would also be entitled to payments from plans generally available to TVA employees under the specific circumstances of termination of employment, including the health and welfare and pension plans and amounts in the 401(k) plan.

William D. Johnson	Retirement/Resignation	Termination without Cause	Termination with Cause	Death	Disability
Severance Agreement <sup>(1)</sup>	\$ —	\$2,089,500	\$—	\$—	\$—
LTDCP	\$ 305,994	\$305,994	\$305,994	\$305,994	\$305,994
SERP	\$ —	<sup>(2)</sup> \$—	<sup>(2)</sup> \$—	<sup>(2)</sup> \$3,515,360	<sup>(3)</sup> \$3,515,360 <sup>(4)</sup>
LTRIP	\$ —	\$450,000	\$—	\$450,000	\$450,000
Deferred Compensation	\$ —	\$—	\$—	\$—	\$—
Total Value of Potential Payments	\$ 305,994	\$2,845,494	\$305,994	\$4,271,354	\$4,271,354

## Notes

(1) In October 2012, TVA entered into an arrangement with Mr. Johnson that provides a lump-sum payment equal to one year's annual salary and one year's executive annual incentive based on 100 percent target payout in the event TVA terminates his employment without cause. For purposes of this provision, termination without cause includes constructive termination which will be deemed to occur if Mr. Johnson terminates his employment because he is asked to take a new position with TVA with a material reduction in level of authority, duties, compensation, and benefits. This provision will not apply, and no lump-sum payment will be made, in the event Mr. Johnson voluntarily terminates his employment or voluntarily retires, or his employment is terminated "for cause" as defined in the agreement.

(2) The five-year vesting requirement has not been met.

(3) Represents the present value of the accumulated benefit.

(4) In the event of death while employed by TVA, the beneficiary will receive a lump sum payment equal to the actuarial equivalent of the benefit that would have been paid had the participant terminated employment on the date of death and elected a joint and 50 percent survivor benefit.



Edgar Filing: Tennessee Valley Authority - Form 10-K

Table of Contents

Charles G. Pardee	Retirement/Resignation	Termination without Cause	Termination with Cause	Death	Disability
Severance Agreement <sup>(1)</sup>	\$ —	\$—	\$—	\$—	\$—
LTDCP	\$ —	\$619,660	\$—	\$619,660	\$—
SERP	\$ —	<sup>(2)</sup> \$—	<sup>(2)</sup> \$—	<sup>(2)</sup> \$1,439,976	<sup>(3)</sup> <sup>(4)</sup> \$1,439,976 <sup>(3)</sup>
LTRIP	\$ —	\$200,000	\$—	\$200,000	\$200,000
Deferred Compensation	\$ —	\$—	\$—	\$—	\$—
Total Value of Potential Payments	\$ —	\$819,660	\$—	\$2,259,636	\$1,639,976

Notes

(1) Mr. Pardee does not have a severance agreement with TVA.

(2) The five-year vesting requirement has not been met.

(3) Represents the present value of the accumulated benefit.

(4) In the event of death while employed by TVA, the beneficiary will receive a lump sum payment equal to the actuarial equivalent of the benefit that would have been paid had the participant terminated employment on the date of death and elected a joint and 50 percent survivor benefit.

John M. Thomas, III	Retirement/Resignation	Termination without Cause	Termination with Cause	Death	Disability
Severance Agreement <sup>(1)</sup>	\$ —	\$—	\$—	\$—	\$—
LTDCP	\$ —	\$—	\$—	\$—	\$—
SERP	\$ 1,651,614	<sup>(2)</sup> <sup>(3)</sup> \$1,651,614 <sup>(4)</sup>	<sup>(2)</sup> <sup>(3)</sup> \$1,651,614 <sup>(4)</sup>	<sup>(2)</sup> <sup>(3)</sup> \$1,651,614 <sup>(4)</sup>	<sup>(2)</sup> <sup>(5)</sup> \$1,651,614 <sup>(2)(3)</sup>
LTRIP	\$ —	\$400,000	\$—	\$400,000	\$400,000
Deferred Compensation	\$ —	\$—	\$—	\$—	\$—

Edgar Filing: Tennessee Valley Authority - Form 10-K

Total Value of Potential Payments	\$ 1,651,614	\$2,051,614	\$1,651,614	\$2,051,614	\$2,051,614
-----------------------------------	--------------	-------------	-------------	-------------	-------------

Notes

- (1) Mr. Thomas does not have a severance agreement with TVA.
- (2) Represents the present value of the accumulated benefit.
- (3) Actual benefit would be paid in five annual installments beginning at age 55.
- (4) Assumes that the TVA Board or its delegate determines that the termination is an approved termination under SERP. See Retirement and Pension Plans — Supplemental Executive Retirement Plan above for a discussion of approved and unapproved terminations under SERP.
- (5) In the event of death while employed by TVA, the beneficiary would receive a lump sum payment equal to the actuarial equivalent of the benefit that would have been paid had the participant terminated employment on the date of death and elected a joint and 50 percent survivor benefit.

Table of Contents

Joseph P. Grimes, Jr.	Retirement/Resignation	Termination without Cause	Termination with Cause	Death	Disability
Severance Agreement <sup>(1)</sup>	\$ —	\$ 555,000	\$—	\$—	\$—
LTDCP	\$ —	\$ 558,633	\$—	\$ 558,633	\$—
SERP	\$ —	<sup>(2)</sup> \$—	<sup>(2)</sup> \$—	<sup>(2)</sup> \$ 270,156	<sup>(3)</sup> \$ 270,156 <sup>(3)</sup> <sup>(4)</sup>
LTRIP	\$ —	\$ 300,000	\$—	\$ 300,000	\$ 300,000
Deferred Compensation	\$ —	\$—	\$—	\$—	\$—
Total Value of Potential Payments	\$ —	\$ 1,413,633	\$—	\$ 1,128,789	\$ 570,156

## Notes

(1) In June 2013, TVA entered into an arrangement with Mr. Grimes that provides a lump sum payment equal to one year's annual salary in the event TVA terminates Mr. Grimes' employment without cause.

(2) The five-year vesting requirement has not been met.

(3) Represents the present value of the accumulated benefit.

(4) In the event of death while employed by TVA, the beneficiary would receive a lump sum payment equal to the actuarial equivalent of the benefit that would have been paid had the participant terminated employment on the date of death and elected a joint and 50 percent survivor benefit

Michael D. Skaggs	Retirement/Resignation	Termination without Cause	Termination with Cause	Death	Disability
Severance Agreement <sup>(1)</sup>	\$ —	\$—	\$—	\$—	\$—
LTDCP	\$ —	\$ 254,420	\$—	\$ 254,420	\$—
SERP	\$ 3,010,982	<sup>(2)</sup> \$ 3,010,982 <sup>(3)</sup> <sup>(4)</sup>	<sup>(2)</sup> \$ 3,010,982 <sup>(3)</sup> <sup>(4)</sup>	<sup>(2)</sup> \$ 3,010,982 <sup>(3)</sup> <sup>(4)</sup>	<sup>(2)</sup> \$ 3,010,982 <sup>(5)</sup> <sup>(3)</sup>
LTRIP	\$ —	\$ 150,000	\$—	\$ 150,000	\$ 150,000
Deferred Compensation <sup>(6)</sup>	\$ 3,547,436	\$ 3,547,436	\$ 3,547,436	\$ 3,547,436	\$ 3,547,436

Edgar Filing: Tennessee Valley Authority - Form 10-K

Total Value of Potential Payments	\$ 6,558,418	\$6,962,838	\$6,558,418	\$6,962,838	\$6,708,418
-----------------------------------	--------------	-------------	-------------	-------------	-------------

Notes

- (1) Mr. Skaggs does not have a severance agreement with TVA.
- (2) Represents the present value of the accumulated benefit.
- (3) Actual benefit would be paid in ten annual installments beginning on the date of Mr. Skaggs' separation from service.
- (4) Assumes that the TVA Board or its delegate determines that the termination is an approved termination under SERP. See Retirement and Pension Plans — Supplemental Executive Retirement Plan above for a discussion of approved and unapproved terminations under SERP.
- (5) In the event of death while employed by TVA, the beneficiary would receive a lump sum payment equal to the actuarial equivalent of the benefit that would have been paid had the participant terminated employment on the date of death and elected a joint and 50 percent survivor benefit.
- (6) Amounts that Mr. Skaggs earned in past years but elected to defer, which are payable pursuant to elections he made and applicable IRS rules.

Table of Contents

## Other Agreements

Except as described above and in the Compensation Discussion and Analysis, there are no other agreements between TVA and any of the Named Executive Officers.

## Director Compensation

The TVA Act provides for up to nine directors on the TVA Board. Under the TVA Act, each director receives certain stipends that are increased annually by the same percentage increase applicable to adjustments under 5 U.S.C. § 5318, which adjusts the annual rates of pay of employees on the Executive Schedule of the United States Government. On January 1, 2015, the stipend for TVA directors was increased to \$50,000 per year unless (1) the director chairs a TVA Board committee, in which case the stipend was increased to \$51,000 per year; or (2) the director is the Chair of the TVA Board, in which case the stipend was increased to \$55,600 per year. Directors are also reimbursed under federal law for travel, lodging, and related expenses while attending meetings and for other official TVA business.

The annual stipends provided by the TVA Act for each director and for the Chair of the TVA Board as of November 20, 2015, are listed below:

## TVA Board Annual Stipends

Name	Annual Stipend (\$)
Marilyn A. Brown	\$51,000
V. Lynn Evans	\$51,000
Richard C. Howorth	\$51,000
Virginia T. Lodge	\$50,000
C. Peter Mahurin	\$51,000
Michael R. McWherter	\$51,000
Joe H. Ritch	\$55,600
Eric M. Satz	\$50,000
Ronald A. Walter	\$50,000

The following table provides information on the compensation received by TVA's directors during 2015.

## Director Compensation

Name	Fees Earned or Paid in Cash (\$)	Stock Awards (\$)	Option Awards (\$)	Non-Equity Incentive Plan Compensation (\$)	Change in Pension Value and Nonqualified Deferred Compensation Earnings <sup>(1)</sup> (\$)	All Other Compensation (\$)	Total (\$)
Marilyn A. Brown	\$50,846	—	—	—	—	\$505	\$51,351
V. Lynn Evans	\$51,075	—	—	—	—	\$2,367	\$53,442
Richard C. Howorth	\$51,075	—	—	—	—	\$2,543	\$53,618
Virginia T. Lodge	\$38,837	—	—	—	—	\$1,423	\$40,260
C. Peter Mahurin	\$51,075	—	—	—	—	\$509	\$51,584
Michael R. McWherter	\$50,846	—	—	—	—	\$505	\$51,351
Joe H. Ritch	\$55,669	—	—	—	—	\$2,771	\$58,440



Edgar Filing: Tennessee Valley Authority - Form 10-K

Eric M. Satz	\$6,731	—	—	—	—	\$260	\$6,991
Ronald A. Walter	\$38,837	—	—	—	—	\$346	\$39,183

Notes

(1) TVA directors do not participate in the TVA Retirement System, TVA's SERP, or any non-qualified deferred compensation plan available to TVA employees. However, as appointed officers of the United States government, the directors are members of FERS. FERS is administered by the federal Office of Personnel Management, and information regarding the value of FERS pension benefits is not available to TVA.

The directors are not eligible to participate in any incentive programs available to TVA employees. The directors do not participate in the TVA Retirement System and do not participate in TVA's SERP. However, as appointed officers of the United States government, the directors are members of the Federal Employees Retirement System ("FERS"). FERS is a tiered retirement plan that includes three components: (1) Social Security benefits, (2) the Basic Benefit Plan, and (3) the Thrift Savings Plan ("TSP"). As members of FERS, each director is required to make a mandatory small percentage contribution of his

## Table of Contents

or her stipend to the Basic Benefit Plan in the amount of 0.8 percent for those directors appointed prior to January 1, 2013, 3.1 percent for those directors appointed between January 1, 2013, and December 31, 2013, and 4.4 percent for those directors appointed on or after January 1, 2014.

The FERS Basic Benefit Plan is a qualified defined benefit plan that provides a retirement benefit based on a final average pay formula that includes age, highest average salary during any three consecutive years of service, and years of creditable service. A director must have at least five years of creditable service to be eligible to receive retirement benefits. Directors are eligible for immediate, unreduced retirement benefits once (1) they reach age 62 and have five years of FERS creditable service, (2) they reach age 60 and have 20 years of FERS creditable service, or (3) they attain the minimum retirement age and accumulate the specified years of service as set forth in the FERS regulations. Generally, benefits are calculated by multiplying 1.0 percent of the highest average salary during any three consecutive years of service by the number of years of creditable service. Directors who retire at age 62 or later with at least 20 years of FERS creditable service receive an enhanced benefit (a factor of 1.1 percent is used rather than 1.0 percent).

Directors may also retire with an immediate benefit under FERS if they reach their minimum retirement age based on type of retirement and years of service and have accumulated at least 10 years of FERS creditable service. For directors who reach the minimum retirement age and have at least 10 years of FERS creditable service, the annuity will be reduced by five percent for each year the director is under age 62.

Each director is also eligible to participate in the TSP. The TSP is a tax-deferred retirement savings and investment plan that offers the same type of savings and tax benefits offered under 401(k) plans. Once a director becomes eligible, TVA contributes an amount equal to one percent of the director's stipend into a TSP account for the director. These contributions are made automatically every two weeks regardless of whether the director makes a contribution of his or her own money. Directors are eligible to contribute up to the IRS elective deferral limit. Directors receive matching contributions of 100 percent of each dollar for the first three percent of the director's stipend and 50 percent of each dollar for the next two percent of the director's stipend.

TVA offers a group of health and other benefits (medical, dental, vision, life and accidental death and disability insurance, and long-term disability insurance) that are available to a broad group of employees. Directors are eligible to participate in TVA's health benefit plans and other non-retirement benefit plans on the same terms and at the same contribution rates as other TVA employees.

## Compensation Committee Interlocks and Insider Participation

The People and Performance Committee of the TVA Board currently consists of the following four directors: Richard C. Howorth, V. Lynn Evans, Virginia T. Lodge, and C. Peter Mahurin.

No executive officer of TVA serves on the board of an entity that has an executive officer serving as a director of TVA.

## Compensation Committee Report

The People and Performance Committee has reviewed and discussed the Compensation Discussion and Analysis with management, and based on the review and discussions, the Committee recommended to the TVA Board that the Compensation Discussion and Analysis be included in this Annual Report.

## PEOPLE AND PERFORMANCE COMMITTEE

Richard C. Howorth, Chair  
V. Lynn Evans  
Virginia T. Lodge  
C. Peter Mahurin

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Not applicable.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Director Independence

The composition of the TVA Board is governed by the TVA Act. The TVA Act contains certain provisions that are similar to the considerations for independence under section 10A(m)(3) of the Exchange Act, including that to be eligible for appointment to the TVA Board, an individual shall not be an employee of TVA and shall make full disclosure to Congress of any investment or other financial interest that the individual holds in the energy industry.

179

---

## Table of Contents

### Related Party Transactions

### Conflict of Interest Provisions

All TVA employees, including directors and executive officers, are subject to the conflict of interest laws and regulations applicable to employees of the federal government. Accordingly, the general federal conflict of interest statute (18 U.S.C. § 208) and the Standards of Ethical Conduct for Employees of Executive Branch (5 C.F.R. part 2635) ("Standards of Ethical Conduct") form the basis of TVA's policies and procedures for the review, approval, or ratification of related party transactions. The general federal conflict of interest statute, subject to certain exceptions, prohibits each government employee, including TVA's directors and executive officers, from participating personally and substantially (by advice, decision, or otherwise) as a government employee in any contract, controversy, proceeding, request for determination, or other official particular matter in which, to his or her knowledge, he or she (or his or her spouse, minor child, general partner, organization with which he or she serves as officer, director, employee, trustee, or general partner, or any person or organization with which he or she is negotiating, or has an arrangement, for future employment) has a financial interest. Exceptions to the statutory prohibition relevant to TVA employees are (1) financial interests which have been deemed by the Office of Government Ethics, in published regulations, to be too remote or inconsequential to affect the integrity of the employee's services, or (2) interests which are determined in writing, after full disclosure and on a case by case basis, to be not so substantial as to be deemed likely to affect the integrity of the employee's services for TVA. In accordance with the statute, individual waiver determinations are made by the official responsible for the employee's appointment. In the case of TVA directors, the determination may be made by the Chair of the TVA Board, and in the case of the Chair of the TVA Board, the determination may be made by the Counsel to the President of the United States.

More broadly, Subpart E of the Standards of Ethical Conduct provides that where an employee (1) knows that a particular matter involving specific parties is likely to have a direct and predictable effect on the financial interests of a member of his or her household, or that a person with whom the employee has a "covered relationship" (which includes, but is not limited to, persons with whom the employee has a close family relationship and organizations in which the employee is an active participant) is or represents a party to the matter, and (2) determines that the circumstances would cause a reasonable person with knowledge of relevant facts to question his or her impartiality in the matter, the employee should not participate in the matter absent agency authorization. This authorization may be given by the employee's supervising officer, as agency designee, in consultation with the TVA Designated Agency Ethics Official, upon the determination that TVA's interest in the employee's participation in the matter outweighs the concern that a reasonable person may question the integrity of TVA's programs and operations.

The previously described restrictions are reflected in TVA's Standard Programs and Processes 11.8.1, Business Ethics, which requires employees, including TVA's directors and executive officers, to comply with the guidelines outlined in the Standards of Ethical Conduct and which restates the standard of the conflict of interest statute.

Additionally, the TVA Board approved a written conflict of interest policy that applies to all TVA employees, including TVA's directors and executive officers. The conflict of interest policy reaffirms the requirement that all TVA employees must comply with applicable federal conflict of interest laws, regulations, and policies. It also establishes an additional policy that is applicable to TVA's directors and CEO, which provides as follows:

In addition to the law and policy applicable to all TVA employees, TVA Directors and the CEO shall comply with the following additional policy restricting the holding of certain financial interests:

1. For purposes of this policy, "financial interest" means an interest of a person, or of a person's spouse or minor child, arising by virtue of investment or credit relationship, ownership, employment, consultancy, or fiduciary relationship

such as director, trustee, or partner. However, financial interest does not include an interest in TVA or any interest:

comprised solely of a right to payment of retirement benefits resulting from former employment or fiduciary relationship,  
arising solely by virtue of cooperative membership or similar interest as a consumer in a distributor of TVA power, or  
arising by virtue of ownership of publicly traded securities:  
of any single entity with a value of \$25,000 or less, or  
of a parent entity with one or more subsidiaries covered by this Policy that collectively contribute to a proportionate owned value of the parent's securities in an amount of \$25,000 or less, or  
of a diversified mutual fund with a value of any amount, or  
of a sector mutual fund, exchange traded fund, or similar investment fund with a value of any amount, provided the fund is not primarily focused on the wholesale or retail generation, transmission, or sale of electricity in North America).

2. Directors and the CEO shall not hold a financial interest in any distributor of TVA power.

Table of Contents

3. Directors and the CEO shall not hold a financial interest in any entity engaged primarily in the wholesale or retail generation, transmission, or sale of electricity, except where substantially all such business is conducted outside of North America.
4. Directors and the CEO shall not hold a financial interest in any entity that may reasonably be perceived as likely to be adversely affected by the success of TVA as a producer or transmitter of electric power.
5. Any action taken or interest held that creates, or may reasonably be perceived as creating, a conflicting financial interest restricted by this additional policy applicable to TVA Directors and the CEO shall immediately be disclosed to the Chair of the Board of Directors and the Chair of the committee exercising the function of the audit committee of the Board. Subject to any commitment made in connection with appointment to office or other requirement of law, a newly appointed Director or CEO shall proceed promptly with arrangements to divest the conflicting financial interest but should in any event conclude such divestiture within one year from the date of assuming office. The audit committee shall be responsible for initially reviewing all other such disclosures and making recommendations to the entire Board on what action, if any, should be taken. The entire Board, without the vote of any Director(s) involved, shall determine the appropriate action to be taken. No such review, recommendation, or determination is required, however, where an inadvertent violation is promptly remedied upon discovery and reported to the Chair of the Board of Directors and the Chair of the audit committee as provided herein.
6. Any waiver of this additional policy applicable to TVA Directors and the CEO may be made only by the Board, and will be disclosed promptly to the public, subject to the limitations on disclosure imposed by law.

TVA also has a protocol titled the "Obtaining Things of Value from TVA Protocol" (the "Protocol"). The Protocol describes what a TVA employee or a member of the TVA Board should do if a person covered by the Protocol asks for assistance in obtaining something of value from TVA.

TVA relies on the policies, practices, laws, and regulations discussed above to regulate conflicts of interest involving employees, including directors and executive officers. TVA has no other written or unwritten policy for the approval or ratification of any transactions in which TVA was or is to be a participant and in which any director or executive officer of TVA (or any child, stepchild, parent, stepparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law of any director or executive officer of TVA) had or will have a direct or indirect material interest.

Other Relationships

TVA is engaged in a number of transactions with other agencies of the U.S. government, although such agencies do not fall within the definition of "related parties" for purposes of Item 404(a) of Regulation S-K. These include, among other things, supplying electricity to other federal agencies, purchasing electricity from the Southeastern Power Administration, and engaging in various arrangements involving nuclear materials with the DOE. See Item 1, Business and Note 23.

TVA also has access to a financing arrangement with the U.S. Treasury. TVA and the U.S. Treasury have a memorandum of understanding under which the U.S. Treasury provides TVA with a \$150 million credit facility. There were no outstanding borrowings under the facility at September 30, 2015. This credit facility matures on September 30, 2016, and is expected to be renewed. This arrangement is pursuant to the TVA Act. Access to this credit facility or other similar financing arrangements with the U.S. Treasury has been available to TVA since the 1960s. See Note 14 — Credit Facility Agreements.

In addition, TVA is required by the 1959 amendment to the TVA Act to make annual payments to the U.S. Treasury from net power proceeds as a repayment of and as a return on the Power Program Appropriation Investment until \$1.0 billion of the Power Program Appropriation Investment has been repaid. With the 2014 payment, TVA fulfilled its requirement to repay \$1.0 billion of the Power Program Appropriation Investment. TVA will indefinitely continue to make payments to the U.S. Treasury as a return on the remaining \$258 million of the Power Program Appropriation Investment. See Note 18 — Appropriation Investment.

Table of Contents

## ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table shows the fees of Ernst & Young LLP for audit, audit-related, and other services for the years ended September 30, 2015 and 2014.

Principal Accountant Fees and Services  
(in actual dollars)

Year	Principal Accountant	Audit Fees <sup>(1)</sup>	Audit-Related Fees	All Other Fees	Total
2015	Ernst & Young LLP	\$2,628,473	\$—	—	\$2,628,473
2014	Ernst & Young LLP	\$2,678,461	\$—	—	\$2,678,461

## Notes

(1) Audit fees consist of payments for professional services rendered in connection with the audit of TVA's annual financial statements, including the annual attestation on internal control over financial reporting and the review of interim financial statements included in TVA's quarterly reports; audit of TVA's fuel cost adjustment; audit of TVA's federal closing package for the preparation and audit of the 2014 and 2015 federal consolidated financial statements of which TVA is a component; and Bond offering and other financing comfort letters.

The TVA Board has an Audit, Risk, and Regulation Committee. Under the TVA Act, the Audit, Risk, and Regulation Committee, in consultation with the Inspector General, recommends to the TVA Board the selection of an external auditor. TVA's Audit, Risk, and Regulation Committee, in consultation with the Inspector General, recommended that the TVA Board select Ernst & Young LLP as TVA's external auditor for the 2014 and 2015 audits and other related services, and the TVA Board approved these recommendations.

TVA has a policy (the "Policy") that requires all auditing services and permissible non-audit services provided by the external auditor to be pre-approved by the Audit, Risk, and Regulation Committee. The Policy also lists the following services as ones the external auditor is not permitted to perform. The prohibited non-audit services are:

- Bookkeeping or other services related to the accounting records or financial statements of TVA;
- Financial information system design and implementation;
- Appraisal or valuation services, fairness opinions, and contribution-in-kind reports;
- Actuarial services;
- Internal audit outsourcing services;
- Management functions or human resources;
- Broker or dealer, investment adviser, or investment banking services;
- Legal services and expert services unrelated to the audit; and
- Any other services that the Public Company Accounting Oversight Board determines, by regulation, are impermissible.

The Policy also delegates to the Chair of the Audit, Risk, and Regulation Committee the authority to pre-approve a permissible service so long as the amount of the service does not exceed \$100,000 and the total amount of services pre-approved during the year by the Chair does not exceed \$200,000. The Chair must report for informational purposes the services pre-approved under this provision at the Audit, Risk, and Regulation Committee's next meeting.

The Audit, Risk, and Regulation Committee pre-approved all audit services for 2014 and 2015.





Table of Contents

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents have been filed as part of this Annual Report:

(1) Consolidated Financial Statements. The following documents are provided in Item 8, Financial Statements and Supplementary Data herein:

Consolidated Statements of Operations

Consolidated Statements of Comprehensive Income (Loss)

Consolidated Balance Sheets

Consolidated Statements of Cash Flow

Consolidated Statements of Changes in Proprietary Capital

Notes to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm (Ernst and Young LLP)

(2) Consolidated Financial Statement Schedules.

Schedules not included are omitted because they are not required or because the required information is provided in the consolidated financial statements, including the notes thereto.

Table of Contents

(3) List of Exhibits

Exhibit No. Description

- 3.1 Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (Incorporated by reference to Exhibit 3.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2007, File No. 000-52313)
- 3.2 Bylaws of the Tennessee Valley Authority Adopted by the TVA Board of Directors on May 18, 2006, as amended on April 3, 2008, May 19, 2008, June 10, 2010, February 13, 2014, August 21, 2014, and November 6, 2014 (Incorporated by reference to Exhibit 3.2 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 4.1 Basic Tennessee Valley Authority Power Bond Resolution Adopted by the TVA Board of Directors on October 6, 1960, as Amended on September 28, 1976, October 17, 1989, and March 25, 1992 (Incorporated by reference to Exhibit 4.1 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.1 \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on June 28, 2012, File No. 000-52313)
- 10.2 Amendment Dated as of December 12, 2012, to \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on December 17, 2012, File No. 000-52313)
- 10.3 Second Amendment Dated as of June 2, 2015, to \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, and amended as of December 12, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on June 5, 2015, File No. 000-52313)
- 10.4 \$1,000,000,000 September 2020 Maturity Credit Agreement Dated as of September 30, 2015, Among TVA, Royal Bank of Canada, as Administrative Agent, Letter of Credit Issuer, and a Lender, Barclays Bank PLC, BNP Paribas, Branch Banking and Trust Company, Mizuho Bank Ltd, Regions Bank, SunTrust Bank, and Wells Fargo Bank, National Association (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on October 5, 2015, File No. 000-52313)
- 10.5

Edgar Filing: Tennessee Valley Authority - Form 10-K

\$500,000,000 February 2020 Maturity Credit Agreement Dated as of August 7, 2015, among TVA, Bank of America, N.A., as Administrative Agent, Letter of Credit Issuer, and a Lender, and the Other Lenders Party Thereto (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on August 7, 2015, File No. 000-52313)

10.6 TVA Discount Notes Selling Group Agreement (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008, File No. 000-52313)

10.7 Electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC (Incorporated by reference to Exhibit 10.4 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)

10.8 Amendment Dated as of December 4, 2013, to Electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter March 31, 2014, File No. 000-52313)

10.9 Second Amendment Dated as of August 28, 2015, to Electronotes® Selling Agent Agreement Dated as of June 1, 2006, and Amended as of December 4, 2013, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC

## Edgar Filing: Tennessee Valley Authority - Form 10-K

### Table of Contents

- 10.10 Assumption Agreement Between TVA and Incapital LLC Dated as of February 29, 2008, Relating to the  
electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial  
Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P.,  
First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce,  
Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC  
(Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter  
ended March 31, 2008, File No. 000-52313)
- 10.11 Commitment Agreement Among Memphis Light, Gas and Water Division, the City of Memphis,  
Tennessee, and TVA Dated as of November 19, 2003 (Incorporated by reference to Exhibit 10.5 to  
TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.12 Power Contract Supplement No. 95 Among Memphis Light, Gas and Water Division, the City of  
Memphis, Tennessee, and TVA Dated as of November 19, 2003 (Incorporated by reference to Exhibit  
10.6 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.13 Void Walk Away Agreement Among Memphis Light, Gas and Water Division, the City of Memphis,  
Tennessee, and TVA Dated as of November 20, 2003 (Incorporated by reference to Exhibit 10.7 to  
TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.14 Power Contract Supplement No. 96 Among Memphis Light, Gas and Water Division, the City of  
Memphis, Tennessee, and TVA Dated as of November 20, 2003 (Incorporated by reference to Exhibit  
10.8 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.15 Overview of TVA's September 26, 2003, Lease and Leaseback of Control, Monitoring, and Data  
Analysis Network with Respect to TVA's Transmission System in Tennessee, Kentucky, Georgia, and  
Mississippi (Incorporated by reference to Exhibit 10.9 to TVA's Annual Report on Form 10-K for the  
year ended September 30, 2006, File No. 000-52313)
- 10.16 Participation Agreement Dated as of September 22, 2003, Among (1) TVA, (2) NVG Network I  
Statutory Trust, (3) Wells Fargo Delaware Trust Company, Not in Its Individual Capacity, Except to the  
Extent Expressly Provided in the Participation Agreement, But as Owner Trustee, (4) Wachovia  
Mortgage Corporation, (5) Wilmington Trust Company, Not in Its Individual Capacity, Except to the  
Extent Expressly Provided in the Participation Agreement, But as Lease Indenture Trustee, and (6)  
Wilmington Trust Company, Not in Its Individual Capacity, Except to the Extent Expressly Provided in  
the Participation Agreement, But as Pass Through Trustee (Incorporated by reference to Exhibit 10.10 to  
TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.17\* Network Lease Agreement Dated as of September 26, 2003, Between NVG Network I Statutory Trust,  
as Owner Lessor, and TVA, as Lessee (Incorporated by reference to Exhibit 10.11 to TVA's Annual  
Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.18\* Head Lease Agreement Dated as of September 26, 2003, Between TVA, as Head Lessor, and NVG  
Network I Statutory Trust, as Head Lessee (Incorporated by reference to Exhibit 10.12 to TVA's Annual  
Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.19\* Leasehold Security Agreement Dated as of September 26, 2003, Made by NVG Network I Statutory  
Trust to TVA (Incorporated by reference to Exhibit 10.13 to TVA's Annual Report on Form 10-K for the  
year ended September 30, 2006, File No. 000-52313)

Edgar Filing: Tennessee Valley Authority - Form 10-K

- 10.20 Facility Lease-Purchase Agreement Dated as of January 17, 2012, Between John Sevier Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.21 Head Lease Agreement Dated as of January 17, 2012, Among the United States of America, TVA, and John Sevier Combined Cycle Generation LLC (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.22 Construction Management Agreement Dated as of January 17, 2012, Between John Sevier Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.23\* Asset Purchase Agreement Dated as of August 6, 2013, Between TVA and Seven States Southaven, LLC (Incorporated by reference to Exhibit 10.33 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.24 Facility Lease-Purchase Agreement Dated as of August 9, 2013, Between Southaven Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.32 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)

185

---

## Edgar Filing: Tennessee Valley Authority - Form 10-K

### Table of Contents

- 10.25 Head Lease Agreement Dated as of August 9, 2013, Among the United States of America, TVA, and Southaven Combined Cycle Generation LLC (Incorporated by reference to Exhibit 10.35 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.26\* Federal Facilities Compliance Agreement Between the United States Environmental Protection Agency and TVA (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011, File No. 000-52313)
- 10.27\* Consent Decree among Alabama, Kentucky, North Carolina, Tennessee, the Alabama Department of Environmental Management, the National Parks Conservation Association, Inc., the Sierra Club, Our Children's Earth Foundation, and TVA (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011, File No. 000-52313)
- 10.28† TVA Compensation Plan Approved by the TVA Board on May 31, 2007 (Incorporated by reference to Exhibit 99.3 to TVA's Current Report on Form 8-K filed on December 11, 2007, File No. 000-52313)
- 10.29† Supplemental Executive Retirement Plan (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.30† Amendment Dated as of August 16, 2011, to Supplemental Executive Retirement Plan (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on August 22, 2011, File No. 000-52313)
- 10.31† Amended and Restated Supplemental Executive Retirement Plan Effective as of May 1, 2015 (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015, File No. 000-52313)
- 10.32† Executive Annual Incentive Plan (Incorporated by reference to Exhibit 10.3 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.33† Amended and Restated Executive Annual Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)
- 10.34† Executive Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.4 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.35† Long-Term Deferred Compensation Plan (Incorporated by reference to Exhibit 10.5 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.36† Deferred Compensation Plan (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.37† Long-Term Retention Incentive Plan (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter March 31, 2014, File No. 000-52313)
- 10.38†

Edgar Filing: Tennessee Valley Authority - Form 10-K

Long-Term Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.3 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)

10.39† Retention Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)

10.40† Offer Letter to William D. Johnson Approved as of November 1, 2012 (Incorporated by reference to Exhibit 99.1 to TVA's Current Report on Form 8-K filed on November 7, 2012, File No. 000-52313)

10.41† Offer Letter to Charles Pardee Accepted as of March 14, 2013 (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on April 5, 2013, File No. 000-52313)

10.42† Offer Letter to Joseph P. Grimes, Jr., Dated as of June 18, 2013 (Incorporated by reference to Exhibit 10.37 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)

10.43† Deferral Agreement Between TVA and William D. Johnson Dated as of January 1, 2013 (Incorporated by reference to Exhibit 10.38 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)

186

---



## Edgar Filing: Tennessee Valley Authority - Form 10-K

### Table of Contents

- 10.44† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of September 27, 2010 (Incorporated by reference to Exhibit 10.40 to TVA's Annual Report on Form 10-K for the year ended September 30, 2010, File No. 000-52313)
- 10.45† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of January 4, 2012 (Incorporated by reference to Exhibit 10.45 to TVA's Annual Report on Form 10-K for the year ended September 30, 2012, File No. 000-52313)
- 10.46† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of April 22, 2013 (Incorporated by reference to Exhibit 10.4 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013, File No. 000-52313)
- 10.47† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of February 27, 2014 (Incorporated by reference to Exhibit 10.43 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.48† Deferral Agreement Between TVA and Charles G. Pardee Dated as of April 23, 2013 (Incorporated by reference to Exhibit 10.44 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.49† Deferral Agreement Between TVA and Joseph P. Grimes, Jr., Dated as of September 5, 2013 (Incorporated by reference to Exhibit 10.45 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.50† Deferral Agreement Between TVA and Michael D. Skaggs Dated as of March 1, 2010 (Incorporated by reference to Exhibit 10.61 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.51† Deferral Agreement Between TVA and Michael D. Skaggs Dated as of March 20, 2013 (Incorporated by reference to Exhibit 10.62 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.52† Long-Term Retention Incentive Plan Award Notice for William D. Johnson for Award Granted as of November 10, 2014 (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.53† Long-Term Retention Incentive Plan Award Notice for John M. Thomas, III, for First Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.54† Long-Term Retention Incentive Plan Award Notice for John M. Thomas, III, for Second Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.55† Long-Term Retention Incentive Plan Award Notice for Charles G. Pardee for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.4 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)

Edgar Filing: Tennessee Valley Authority - Form 10-K

- 10.56† Long-Term Retention Incentive Plan Award Notice for Joseph P. Grimes, Jr., for Award Granted as of June 1, 2014
- 10.57† Long-Term Retention Incentive Plan Award Notice for Joseph P. Grimes, Jr., for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.5 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.58† Long-Term Retention Incentive Plan Award Notice for Michael D. Skaggs for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.6 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.59† Retention Incentive Arrangement Between TVA and John M. Thomas, III, Dated as of January 1, 2015 (Incorporated by reference to Exhibit 10.7 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 14.1 Disclosure and Financial Ethics Code (Incorporated by reference to Exhibit 14 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)

187

---

Table of Contents

14.2	TVA Conflict of Interest Policy, as amended (Incorporated by reference to Exhibit 14.2 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
31.1	Rule 13a-14(a)/15d-14(a) Certification Executed by the Chief Executive Officer
31.2	Rule 13a-14(a)/15d-14(a) Certification Executed by the Chief Financial Officer
32.1	Section 1350 Certification Executed by the Chief Executive Officer
32.2	Section 1350 Certification Executed by the Chief Financial Officer
101.INS	TVA XBRL Instance Document
101.SCH	TVA XBRL Taxonomy Extension Schema
101.CAL	TVA XBRL Taxonomy Extension Calculation Linkbase
101.DEF	TVA XBRL Taxonomy Extension Definition Linkbase
101.LAB	TVA XBRL Taxonomy Extension Label Linkbase
101.PRE	TVA XBRL Taxonomy Extension Presentation Linkbase

† Management contract or compensatory arrangement.

\* Certain schedule(s) and/or exhibit(s) have been omitted. The Tennessee Valley Authority hereby undertakes to furnish supplementally copies of any of the omitted schedules and/or exhibits upon request by the Securities and Exchange Commission.

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13, 15(d), or 37 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Date: November 20, 2015

TENNESSEE VALLEY AUTHORITY  
(Registrant)  
By: /s/ William D. Johnson  
William D. Johnson  
President and Chief Executive Officer

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

189

---

Table of Contents

Signature	Title	Date
/s/ William D. Johnson William D. Johnson	President and Chief Executive Officer (Principal Executive Officer)	November 20, 2015
/s/ John M. Thomas, III John M. Thomas, III	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	November 20, 2015
/s/ Diane Wear Diane Wear	Vice President and Controller (Principal Accounting Officer)	November 20, 2015
/s/ Joe H. Ritch Joe H. Ritch	Chair	November 20, 2015
/s/ Marilyn A. Brown Marilyn A. Brown	Director	November 20, 2015
/s/ V. Lynn Evans V. Lynn Evans	Director	November 20, 2015
/s/ Richard C. Howorth Richard C. Howorth	Director	November 20, 2015
/s/ Virginia T. Lodge Virginia T. Lodge	Director	November 20, 2015
/s/ C. Peter Mahurin C. Peter Mahurin	Director	November 20, 2015
/s/ Michael R McWherter Michael R. McWherter	Director	November 20, 2015
/s/ Eric Satz Eric Satz	Director	November 20, 2015

Edgar Filing: Tennessee Valley Authority - Form 10-K

/s/ Ronald A. Walter  
Ronald A. Walter

Director

November 20, 2015

190

---

Table of Contents

EXHIBIT INDEX

Exhibit No. Description

- 3.1 Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (Incorporated by reference to Exhibit 3.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2007, File No. 000-52313)
- 3.2 Bylaws of the Tennessee Valley Authority Adopted by the TVA Board of Directors on May 18, 2006, as amended on April 3, 2008, May 19, 2008, June 10, 2010, February 13, 2014, August 21, 2014, and November 6, 2014 (Incorporated by reference to Exhibit 3.2 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 4.1 Basic Tennessee Valley Authority Power Bond Resolution Adopted by the TVA Board of Directors on October 6, 1960, as Amended on September 28, 1976, October 17, 1989, and March 25, 1992 (Incorporated by reference to Exhibit 4.1 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.1 \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on June 28, 2012, File No. 000-52313)
- 10.2 Amendment Dated as of December 12, 2012, to \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on December 17, 2012, File No. 000-52313)
- 10.3 Second Amendment Dated as of June 2, 2015, to \$1,000,000,000 Spring Maturity Credit Agreement Dated as of June 25, 2012, and amended as of December 12, 2012, among TVA, The Bank of New York Mellon as Administrative Agent, Letter of Credit Issuer, and a Lender, Bank of America, N.A., Canadian Imperial Bank of Commerce, New York Agency, First Tennessee Bank National Association, Morgan Stanley Bank, N.A., and Toronto Dominion (New York) LLC (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on June 5, 2015, File No. 000-52313)
- 10.4 \$1,000,000,000 September 2020 Maturity Credit Agreement Dated as of September 30, 2015, Among TVA, Royal Bank of Canada, as Administrative Agent, Letter of Credit Issuer, and a Lender, Barclays Bank PLC, BNP Paribas, Branch Banking and Trust Company, Mizuho Bank Ltd, Regions Bank, SunTrust Bank, and Wells Fargo Bank, National Association (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on October 5, 2015, File No. 000-52313)
- 10.5 \$500,000,000 February 2020 Maturity Credit Agreement Dated as of August 7, 2015, among TVA, Bank of America, N.A., as Administrative Agent, Letter of Credit Issuer, and a Lender, and the Other Lenders Party Thereto (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on August 7, 2015, File No. 000-52313)

- 10.6 TVA Discount Notes Selling Group Agreement (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008, File No. 000-52313)
- 10.7 Electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC (Incorporated by reference to Exhibit 10.4 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
- 10.8 Amendment Dated as of December 4, 2013, to Electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter March 31, 2014, File No. 000-52313)
- 10.9 Second Amendment Dated as of August 28, 2015, to Electronotes® Selling Agent Agreement Dated as of June 1, 2006, and Amended as of December 4, 2013, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC



Table of Contents

10.10	Assumption Agreement Between TVA and Incapital LLC Dated as of February 29, 2008, Relating to the electronotes® Selling Agent Agreement Dated as of June 1, 2006, Among TVA, LaSalle Financial Services, Inc., A.G. Edwards & Sons, Inc., Citigroup Global Markets Inc., Edward D. Jones & Co., L.P., First Tennessee Bank National Association, J.J.B. Hilliard, W.L. Lyons, Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. Incorporated, and Wachovia Securities, LLC (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended March 31, 2008, File No. 000-52313)
10.11	Commitment Agreement Among Memphis Light, Gas and Water Division, the City of Memphis, Tennessee, and TVA Dated as of November 19, 2003 (Incorporated by reference to Exhibit 10.5 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.12	Power Contract Supplement No. 95 Among Memphis Light, Gas and Water Division, the City of Memphis, Tennessee, and TVA Dated as of November 19, 2003 (Incorporated by reference to Exhibit 10.6 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.13	Void Walk Away Agreement Among Memphis Light, Gas and Water Division, the City of Memphis, Tennessee, and TVA Dated as of November 20, 2003 (Incorporated by reference to Exhibit 10.7 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.14	Power Contract Supplement No. 96 Among Memphis Light, Gas and Water Division, the City of Memphis, Tennessee, and TVA Dated as of November 20, 2003 (Incorporated by reference to Exhibit 10.8 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.15	Overview of TVA's September 26, 2003, Lease and Leaseback of Control, Monitoring, and Data Analysis Network with Respect to TVA's Transmission System in Tennessee, Kentucky, Georgia, and Mississippi (Incorporated by reference to Exhibit 10.9 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.16	Participation Agreement Dated as of September 22, 2003, Among (1) TVA, (2) NVG Network I Statutory Trust, (3) Wells Fargo Delaware Trust Company, Not in Its Individual Capacity, Except to the Extent Expressly Provided in the Participation Agreement, But as Owner Trustee, (4) Wachovia Mortgage Corporation, (5) Wilmington Trust Company, Not in Its Individual Capacity, Except to the Extent Expressly Provided in the Participation Agreement, But as Lease Indenture Trustee, and (6) Wilmington Trust Company, Not in Its Individual Capacity, Except to the Extent Expressly Provided in the Participation Agreement, But as Pass Through Trustee (Incorporated by reference to Exhibit 10.10 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.17*	Network Lease Agreement Dated as of September 26, 2003, Between NVG Network I Statutory Trust, as Owner Lessor, and TVA, as Lessee (Incorporated by reference to Exhibit 10.11 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.18*	Head Lease Agreement Dated as of September 26, 2003, Between TVA, as Head Lessor, and NVG Network I Statutory Trust, as Head Lessee (Incorporated by reference to Exhibit 10.12 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)
10.19*	Leasehold Security Agreement Dated as of September 26, 2003, Made by NVG Network I Statutory Trust to TVA (Incorporated by reference to Exhibit 10.13 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)

- 10.20 Facility Lease-Purchase Agreement Dated as of January 17, 2012, Between John Sevier Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.21 Head Lease Agreement Dated as of January 17, 2012, Among the United States of America, TVA, and John Sevier Combined Cycle Generation LLC (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.22 Construction Management Agreement Dated as of January 17, 2012, Between John Sevier Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2011, File No. 000-52313)
- 10.23\* Asset Purchase Agreement Dated as of August 6, 2013, Between TVA and Seven States Southaven, LLC (Incorporated by reference to Exhibit 10.33 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.24 Facility Lease-Purchase Agreement Dated as of August 9, 2013, Between Southaven Combined Cycle Generation LLC and TVA (Incorporated by reference to Exhibit 10.32 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)

## Edgar Filing: Tennessee Valley Authority - Form 10-K

### Table of Contents

- 10.25 Head Lease Agreement Dated as of August 9, 2013, Among the United States of America, TVA, and Southaven Combined Cycle Generation LLC (Incorporated by reference to Exhibit 10.35 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.26\* Federal Facilities Compliance Agreement Between the United States Environmental Protection Agency and TVA (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011, File No. 000-52313)
- 10.27\* Consent Decree among Alabama, Kentucky, North Carolina, Tennessee, the Alabama Department of Environmental Management, the National Parks Conservation Association, Inc., the Sierra Club, Our Children's Earth Foundation, and TVA (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011, File No. 000-52313)
- 10.28† TVA Compensation Plan Approved by the TVA Board on May 31, 2007 (Incorporated by reference to Exhibit 99.3 to TVA's Current Report on Form 8-K filed on December 11, 2007, File No. 000-52313)
- 10.29† Supplemental Executive Retirement Plan (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.30† Amendment Dated as of August 16, 2011, to Supplemental Executive Retirement Plan (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on August 22, 2011, File No. 000-52313)
- 10.31† Amended and Restated Supplemental Executive Retirement Plan Effective as of May 1, 2015 (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015, File No. 000-52313)
- 10.32† Executive Annual Incentive Plan (Incorporated by reference to Exhibit 10.3 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.33† Amended and Restated Executive Annual Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)
- 10.34† Executive Long-Term Incentive Plan (Incorporated by reference to Exhibit 10.4 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.35† Long-Term Deferred Compensation Plan (Incorporated by reference to Exhibit 10.5 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.36† Deferred Compensation Plan (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on January 6, 2009, File No. 000-52313)
- 10.37† Long-Term Retention Incentive Plan (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter March 31, 2014, File No. 000-52313)
- 10.38†

Edgar Filing: Tennessee Valley Authority - Form 10-K

Long-Term Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.3 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)

10.39† Retention Incentive Plan Effective as of October 1, 2015 (Incorporated by reference to Exhibit 10.2 to TVA's Current Report on Form 8-K filed on October 1, 2015, File No. 000-52313)

10.40† Offer Letter to William D. Johnson Approved as of November 1, 2012 (Incorporated by reference to Exhibit 99.1 to TVA's Current Report on Form 8-K filed on November 7, 2012, File No. 000-52313)

10.41† Offer Letter to Charles Pardee Accepted as of March 14, 2013 (Incorporated by reference to Exhibit 10.1 to TVA's Current Report on Form 8-K filed on April 5, 2013, File No. 000-52313)

10.42† Offer Letter to Joseph P. Grimes, Jr., Dated as of June 18, 2013 (Incorporated by reference to Exhibit 10.37 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)

10.43† Deferral Agreement Between TVA and William D. Johnson Dated as of January 1, 2013 (Incorporated by reference to Exhibit 10.38 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)

## Edgar Filing: Tennessee Valley Authority - Form 10-K

### Table of Contents

- 10.44† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of September 27, 2010 (Incorporated by reference to Exhibit 10.40 to TVA's Annual Report on Form 10-K for the year ended September 30, 2010, File No. 000-52313)
- 10.45† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of January 4, 2012 (Incorporated by reference to Exhibit 10.45 to TVA's Annual Report on Form 10-K for the year ended September 30, 2012, File No. 000-52313)
- 10.46† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of April 22, 2013 (Incorporated by reference to Exhibit 10.4 to TVA's Quarterly Report on Form 10-Q for the quarter ended June 30, 2013, File No. 000-52313)
- 10.47† Deferral Agreement Between TVA and John M. Thomas, III, Dated as of February 27, 2014 (Incorporated by reference to Exhibit 10.43 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.48† Deferral Agreement Between TVA and Charles G. Pardee Dated as of April 23, 2013 (Incorporated by reference to Exhibit 10.44 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.49† Deferral Agreement Between TVA and Joseph P. Grimes, Jr., Dated as of September 5, 2013 (Incorporated by reference to Exhibit 10.45 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
- 10.50† Deferral Agreement Between TVA and Michael D. Skaggs Dated as of March 1, 2010 (Incorporated by reference to Exhibit 10.61 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.51† Deferral Agreement Between TVA and Michael D. Skaggs Dated as of March 20, 2013 (Incorporated by reference to Exhibit 10.62 to TVA's Annual Report on Form 10-K for the year ended September 30, 2013, File No. 000-52313)
- 10.52† Long-Term Retention Incentive Plan Award Notice for William D. Johnson for Award Granted as of November 10, 2014 (Incorporated by reference to Exhibit 10.1 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.53† Long-Term Retention Incentive Plan Award Notice for John M. Thomas, III, for First Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.2 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.54† Long-Term Retention Incentive Plan Award Notice for John M. Thomas, III, for Second Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.3 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.55† Long-Term Retention Incentive Plan Award Notice for Charles G. Pardee for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.4 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)

Edgar Filing: Tennessee Valley Authority - Form 10-K

- 10.56† Long-Term Retention Incentive Plan Award Notice for Joseph P. Grimes, Jr., for Award Granted as of June 1, 2014
- 10.57† Long-Term Retention Incentive Plan Award Notice for Joseph P. Grimes, Jr., for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.5 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.58† Long-Term Retention Incentive Plan Award Notice for Michael D. Skaggs for Award Granted as of January 1, 2015 (Incorporated by reference to Exhibit 10.6 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 10.59† Retention Incentive Arrangement Between TVA and John M. Thomas, III, Dated as of January 1, 2015 (Incorporated by reference to Exhibit 10.7 to TVA's Quarterly Report on Form 10-Q for the quarter ended December 31, 2014, File No. 000-52313)
- 14.1 Disclosure and Financial Ethics Code (Incorporated by reference to Exhibit 14 to TVA's Annual Report on Form 10-K for the year ended September 30, 2006, File No. 000-52313)

194

---

Table of Contents

14.2	TVA Conflict of Interest Policy, as amended (Incorporated by reference to Exhibit 14.2 to TVA's Annual Report on Form 10-K for the year ended September 30, 2014, File No. 000-52313)
31.1	Rule 13a-14(a)/15d-14(a) Certification Executed by the Chief Executive Officer
31.2	Rule 13a-14(a)/15d-14(a) Certification Executed by the Chief Financial Officer
32.1	Section 1350 Certification Executed by the Chief Executive Officer
32.2	Section 1350 Certification Executed by the Chief Financial Officer
101.INS	TVA XBRL Instance Document
101.SCH	TVA XBRL Taxonomy Extension Schema
101.CAL	TVA XBRL Taxonomy Extension Calculation Linkbase
101.DEF	TVA XBRL Taxonomy Extension Definition Linkbase
101.LAB	TVA XBRL Taxonomy Extension Label Linkbase
101.PRE	TVA XBRL Taxonomy Extension Presentation Linkbase

† Management contract or compensatory arrangement.

\* Certain schedule(s) and/or exhibit(s) have been omitted. The Tennessee Valley Authority hereby undertakes to furnish supplementally copies of any of the omitted schedules and/or exhibits upon request by the Securities and Exchange Commission.