

Tennessee Valley Authority  
Form 10-K  
November 18, 2013  
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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, 2013

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.

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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

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## GLOSSARY OF COMMON ACRONYMS

Following are definitions of terms or acronyms frequently used in this Annual Report on Form 10-K for the fiscal year ended September 30, 2013 (the “Annual Report”):

Term or Acronym	Definition
AFUDC	Allowance for funds used during construction
ARO	Asset retirement obligation
ART	Asset Retirement Trust
ASLB	Atomic Safety and Licensing Board
BEST	Bellefonte Efficiency and Sustainability Team
BREDL	Blue Ridge Environmental Defense League
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CCOLA	Combined construction and operating license application
CCP	Coal combustion products
CCR	Coal combustion residual
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
COLA	Cost of living adjustment
CSAPR	Cross State Air Pollution Rule
CTs	Combustion turbine unit(s)
CVA	Credit valuation adjustment
CY	Calendar year
EPA	Environmental Protection Agency
FASB	Financial Accounting Standards Board
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
GWh	Gigawatt hour(s)
IRP	Integrated Resource Plan
IRUs	Indefeasible rights of use
JSCCG	John Sevier Combined Cycle Generation LLC
kWh	Kilowatt hour(s)
LIBOR	London Interbank Offered Rate
LPC	Local Power Company Customer of TVA
MD&A	Management’s Discussion and Analysis of Financial Condition and Results of Operations
mmBtu	Million British thermal unit(s)
MtM	Mark-to-market
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAV	Net asset values
NDT	Nuclear Decommissioning Trust

NEIL  
NEPA

Nuclear Electric Insurance Limited  
National Environmental Policy Act

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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
OCI	Other comprehensive income (loss)
PARRS	Putable Automatic Rate Reset Securities
PM	Particulate matter
PSD	Prevention of Significant Deterioration
QTE	Qualified technological equipment and software
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
SMR	Small modular reactor(s)
SO <sub>2</sub>	Sulfur dioxide
SSSL	Seven States Southaven, LLC
TCWN	Tennessee Clean Water Network
TDEC	Tennessee Department of Environment & Conservation
TOU	Time-of-use
TVARS	Tennessee Valley Authority Retirement System
TWQCB	Tennessee Water Quality Control Board
USEC	United States Enrichment Corporation
VIE	Variable interest entity
XBRL	eXtensible Business Reporting Language
WCD	Waste Confidence Decision

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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," 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 or amended laws, regulations, or administrative determinations, including those related to environmental matters, and the costs of complying with these laws, regulations, and administrative determinations;
- 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");
- 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 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, 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 cost and schedule for completing Watts Bar Nuclear Plant ("Watts Bar") Unit 2 and preserving Bellefonte Nuclear Plant ("Bellefonte") Unit 1 for possible completion, or cause TVA to forego future construction at these or other facilities;
- Significant delays, cost increases, or cost overruns associated with the construction of generation or transmission assets;
- 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 the Kingston Fossil Plant ("Kingston") ash spill;
- Inability to eliminate identified deficiencies in TVA's systems, standards, controls, and corporate culture;
- The outcome of legal and administrative proceedings;
- Significant changes in demand for electricity;
- Addition or loss of customers;
- 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;
- 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;
- 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 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, as well as inadequacies in the supply of water to TVA's generation facilities;
- Inability to obtain regulatory approval for the construction or operation of assets;
- Weather conditions;

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Catastrophic events such as fires, earthquakes, solar events, 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;

Restrictions on TVA's ability to use or manage real property currently under its control;

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;

Changes in the market price of equity securities, debt securities, and other investments;

Changes in interest rates, currency exchange rates, and inflation rates;

Changes in the timing or amount of pension and health care costs;

Increases in TVA's financial liability for decommissioning its nuclear facilities and retiring other assets;

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 TVA Act of 1933;

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, and an increased reliance by TVA on alternative financing arrangements as TVA approaches its debt ceiling;

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• Actions taken, or inaction, by the U.S. government to address the situation of approaching its debt limit;  
• Changes in the economy and volatility in financial markets;  
• Ineffectiveness of TVA's disclosure controls and procedures and its internal control over financial reporting;  
• Problems attracting and retaining a qualified workforce;  
• Changes in technology;  
• Failure of TVA's assets to operate as planned;  
• Failure of TVA's cyber security program to protect TVA's assets from cyber attacks;  
• Differences between estimates of revenues and expenses and actual revenues earned and expenses incurred; and  
• 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 (2013, 2012, 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 (as amended, 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's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to those reports are available on TVA's web site, free of charge, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). TVA's web site is [www.tva.gov](http://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. TVA's SEC reports are also available to the public without charge from the web site maintained by the SEC at [www.sec.gov](http://www.sec.gov).



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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 2013, 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 ("RRSC") and the Regional Energy Resource Council--under the Federal Advisory Council Act to advise TVA on its energy resource activities and its stewardship activities in the Tennessee Valley.

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 customer of TVA ("LPC") which distribute its 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, an amendment to 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 for the purpose of using TVA's transmission lines 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.



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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)

	2013	2012	2011
Alabama	\$1,551	\$1,556	\$1,699
Georgia	260	234	272
Kentucky	1,019	1,230	1,159
Mississippi	1,029	1,038	1,095
North Carolina	52	69	58
Tennessee	6,818	6,889	7,370
Virginia	53	49	60
Subtotal	10,782	11,065	11,713
Sale for resale and other	47	21	10
Subtotal	10,829	11,086	11,723
Other revenues	127	134	118
Operating revenues	\$10,956	\$11,220	\$11,841

## Note

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

## 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



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entities ("cooperatives"). These municipalities and cooperatives operate public power electric systems that are not doing business for profit but are operated primarily for the purpose of supplying electricity to the general public or members. TVA also sells power to directly served customers, consisting primarily of federal agencies and customers with large or unusual loads. In addition, power that exceeds 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.

## Operating Revenues by Customer Type

For the years ended September 30

(in millions)

	2013	2012	2011
Sales of electricity			
Local power companies	\$9,463	\$9,506	\$10,144
Industries directly served	1,199	1,442	1,440
Federal agencies and other	167	138	139
Total sales of electricity	10,829	11,086	11,723
Other revenues	127	134	118
Operating revenues	\$10,956	\$11,220	\$11,841

## Local Power Company Customers

Revenues from LPCs accounted for 86 percent of TVA's total operating revenues in 2013. At September 30, 2013, TVA had wholesale power contracts with 155 LPCs. Each of these contracts requires the LPCs to purchase from TVA all of its electric power and energy consumed within the TVA service area.

All LPCs purchase power under one of three basic termination notice arrangements:

- Contracts that require five years' notice to terminate;
- Contracts that require 10 years' notice to terminate; and
- Contracts that require 15 years' notice to terminate.

The number of LPCs with the contract arrangements described above, the revenues derived from such arrangements in 2013, and the percentage of TVA's 2013 total operating revenues represented by these revenues are summarized in the table below.

## TVA Local Power Company Customer Contracts

At September 30, 2013

Contract Arrangements <sup>(1)</sup>	Number of LPCs	Sales to LPCs in 2013 (in millions)	Percentage of Total Operating Revenues in 2013	
15-year termination notice	6	\$155	1.4	%
10-year termination notice	47	3,103	28.3	%
5-year termination notice	102	6,205	56.6	%
Total	155	\$9,463	86.3	%

## Note

(1) Ordinarily the LPC and TVA have the same termination notice period; however, in contracts with eight 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). 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 2013, sales to MLGW and NES accounted for nine percent and eight percent, respectively.

The power contracts between TVA and the LPC provide for purchase of power by the LPC at the wholesale rates established by the TVA Board. Under section 10 of the TVA Act, the TVA Board is authorized to regulate the LPC 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 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 their customers. These rates are revised from time to time,

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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.

### Other Customers

Revenues from directly served industrial customers accounted for 11 percent of TVA's total operating revenues in 2013. 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.

The United States Enrichment Corporation ("USEC"), a subsidiary of USEC, Inc., was TVA's largest directly served industrial customer. On May 24, 2013, USEC announced the cessation of enrichment activities at its Paducah, Kentucky site. TVA and USEC have subsequently completed agreements to extend power sales to facilitate the cessation of enrichment activities and to support non-enrichment activities at the site at a greatly reduced level. These sales arrangements may continue to be extended. Power sales to USEC represented three percent and five percent of TVA's total operating revenues for the years ended September 30, 2013, and 2012, respectively.

### 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 7.

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 by the operation of the fuel cost adjustment formula each month. 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
- Debt service coverage.

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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. These rate structures provide price signals intended to incentivize LPCs and end-use customers to shift energy usage from high-cost generation periods to less expensive generation periods. The rates are intended to more closely align TVA's revenues with its costs.

For LPCs, the default wholesale rate structure is seasonal TOU. The wholesale rate provisions originally specified that the SDE option expired in September 2012. In April 2012, the TVA Board approved optional enhanced TOU and SDE structures which became effective in October 2012. TVA allowed LPCs to elect one of these wholesale rate structures and make retail adjustments consistent with their wholesale elections. LPC elections as of October 1, 2013, are as follows: 144 are served under the enhanced TOU structure, five remain served under the default seasonal TOU structure, and six are served under the enhanced SDE structure.

TVA's rates also include a fuel cost recovery mechanism that automatically adjusts its rates each month to recover its fuel costs, which include 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.

On August 22, 2013, the TVA Board approved a five-year extension of the environmental adjustment (which commenced in 2004), which reflects the need to collect revenue for environmental expenditures to further TVA's environmental performance, as well as comply with new, more stringent air, water, and waste regulations. The environmental adjustment currently recovers approximately \$415 million per year. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Ratemaking. In addition, the TVA Board approved a non-fuel base rate increase of 2.63 percent on wholesale rates. It is anticipated this will increase base revenues by approximately \$190 million for 2014.

## Power Supply

### General

Power generating facilities operated by TVA at September 30, 2013, included 29 conventional hydroelectric sites, one pumped-storage hydroelectric site, 10 coal-fired sites, three nuclear sites, 14 natural gas and/or oil-fired sites, one diesel generator site, 16 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, 2013. See Net Capability for a discussion of these out-of-service facilities. TVA also acquires power under power purchase agreements of varying durations as well as short-term contracts of less than 24-hours in duration.

The following table summarizes TVA's net generation in millions of kilowatt hours ("kWh") by generating source and the percentage of all electric power generated by TVA for the years indicated:

Power Supply from TVA-Operated Generation Facilities

For the years ended September 30

(millions of kWh)

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	2013		2012		2011			
Coal-fired	62,519	43	% 58,584	41	% 74,583	52	%	
Nuclear	52,100	36	% 55,244	38	% 49,562	34	%	
Hydroelectric	18,178	12	% 12,817	9	% 12,706	9	%	
Natural gas and/or oil-fired	13,102	9	% 16,650	12	% 6,809	5	%	
Renewable resources (non-hydro)	9	(1) <1%	25	(1) <1%	17	(1) <1%		
Total	145,908	100	% 143,320	100	% 143,677	100	%	

Note

(1) Operation and maintenance issues reduced the available renewable generation during 2013, 2012, and 2011 from several facilities, including those utilizing methane, solar, and wind.

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## Net Capability

The following table summarizes TVA's summer net capability in megawatts ("MW") at September 30, 2013:

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

At September 30, 2013

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 <sup>(2)</sup>					
Allen <sup>(3)</sup>	Tennessee	3	741	1959	1959
Bull Run	Tennessee	1	863	1967	1967
Colbert <sup>(3),(4)</sup>	Alabama	5	1,184	1955	1965
Cumberland	Tennessee	2	2,470	1973	1973
Gallatin	Tennessee	4	976	1956	1959
Johnsonville <sup>(5)</sup>	Tennessee	8	924	1951	1959
Kingston	Tennessee	9	1,398	1954	1955
Paradise	Kentucky	3	2,201	1963	1970
Shawnee <sup>(5)</sup>	Kentucky	9	1,206	1953	1955
Widows Creek <sup>(5),(6)</sup>	Alabama	2	938	1954	1965
Total Coal-Fired		46	12,901		
Nuclear					
Browns Ferry	Alabama	3	3,309	1974	1977
Sequoyah	Tennessee	2	2,292	1981	1982
Watts Bar	Tennessee	1	1,123	1996	1996
Total Nuclear		6	6,724		
Hydroelectric					
Conventional Plants					
	Alabama	36	1,176	1925	1962
	Georgia	2	35	1931	1956
	Kentucky	5	223	1944	1948
	North Carolina	6	492	1940	1956
	Tennessee	60	1,891	1912	1972
Pumped-Storage <sup>(7)</sup>	Tennessee	4	1,616	1978	1979
Total Hydroelectric		113	5,433		
Natural Gas and/or Oil-Fired <sup>(8),(9)</sup>					
Simple-Cycle Combustion Turbine					
Allen <sup>(10)</sup>	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>(11)</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
		87	5,388		

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Subtotal Simple-Cycle Combustion					
Turbine					
Combined-Cycle Combustion Turbine					
Caledonia <sup>(12)</sup>	Mississippi	3	765	2003	2003
John Sevier <sup>(13)</sup>	Tennessee	1	870	2012	2012
Lagoon Creek <sup>(14)</sup>	Tennessee	1	525	2010	2010
Magnolia	Mississippi	3	920	2003	2003
Southaven	Mississippi	3	774	2003	2003
Subtotal Combined-Cycle Combustion					
Turbine		11	3,854		
Total Natural Gas and/or Oil-Fired		98	9,242		



Table of ContentsDiesel Generator<sup>(15)</sup>

Meridian	Mississippi	5	9	1998	1998
Total Diesel Generators		5	9		
TVA Renewable Resources (non-hydro) <sup>(16)</sup>			< 1		
Total TVA-Operated Generating Facilities			34,309		
Contract Renewable Resources <sup>(17)</sup>			43		
Power Purchase and Other Agreements			2,242		
Total Summer Net Capability			36,594		

## 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) John Sevier Units 1 and 2 were retired on December 31, 2012, and Units 3 and 4 were mothballed on December 31, 2012.

(3) 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.

(4) Colbert Unit 5 was idled on October 1, 2013.

(5) Includes only active units. See Power Supply — Coal-Fired for a discussion of TVA's idling plans for units.

(6) Widows Creek Units 3 and 5 were retired on July 31, 2013.

(7) All four units at Raccoon Mountain Pumped-Storage Plant were temporarily out of service at September 30, 2013. All units are expected to return to service in 2014.

(8) See Item 2, Properties for a discussion of TVA-operated natural gas and/or oil-fired facilities subject to leaseback and long-term lease arrangements.

(9) Peak firing of simple-cycle combustion turbine units accounts for an additional 257 MW of short-term capability.

(10) The Allen Simple-Cycle Facility had four units (64 MW) out of service pending maintenance at September 30, 2013.

(11) The units at the Gleason Simple-Cycle Facility were derated to 360 MW as of September 30, 2013, pending maintenance.

(12) Caledonia is currently a leased facility operated by TVA.

(13) John Sevier Combined Cycle Facility is a single steam cycle unit driven by three gas turbines (3x1 configuration).

(14) Lagoon Creek Combined Cycle Facility is a single steam cycle unit driven by two gas turbines (2x1 configuration).

(15) In February 2013, TVA sold its diesel generators located in Albertville, Alabama.

(16) TVA's three wind turbines (2 MW nameplate capacity) at its Buffalo Mountain Site in Tennessee were not operational as of September 30, 2013, and do not appear to be economical for returning to operation. TVA owns 0.4 MW of solar installations at 16 sites.

(17) Contract Renewable Resources include Generation Partners, Renewable Standard Offer, and 15 wind turbine generators located on Buffalo Mountain. See Power Supply — Purchased Power and Other Agreements for information on renewable energy power purchase contracts.

## 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 is temporarily unavailable due to equipment failures, inspections,

or repairs. As of September 30, 2013, TVA had 10 coal-fired plants consisting of 46 active units, accounting for 12,901 MW of summer net capability. As of September 30, 2013, TVA had 14 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. TVA currently has four retired units: John Sevier Fossil Plant ("John Sevier") Units 1 and 2 and Widows Creek Fossil Plant ("Widows Creek") Units 3 and 5. 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, 2013, TVA had nine mothballed units: Shawnee Fossil Plant ("Shawnee") Unit 10, Johnsonville Fossil Plant ("Johnsonville") Units 7 and 8, Widows Creek Units 1, 2, 4, and 6, and John Sevier Units 3 and 4. 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, 2013, TVA had one unit in inactive reserve: Colbert Fossil Plant ("Colbert") Unit 5. On October 1, 2013, four additional units were mothballed — Johnsonville Units 5, 6, 9, and 10 — and the status of Colbert Unit 5 was changed from inactive reserve to mothballed. 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 to make the required capital investments to continue operating, or to decommission these facilities. In April 2011, TVA entered into two agreements (collectively, the "Environmental Agreements"). 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. 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.

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The following table summarizes the retirement actions TVA is required to take under the Environmental Agreements, and the status of those actions.

Fossil Plant	Total Units	Existing Scrubbers and SCRs <sup>(1)</sup>	Requirements Under Environmental Agreements	Retirements Implemented or Planned to be Implemented by TVA as a Result of Environmental Agreements
John Sevier	2	None	· Retire two units no later than December 31, 2012	· Retired Units 1 and 2 on December 31, 2012 · Retire six units by December 31, 2015
Johnsonville	10	None	· Retire six units no later than December 31, 2015 · Retire four units no later than December 31, 2017	· Retire four units by December 31, 2017 · Idled Units 7 and 8 effective March 1, 2012 · Idled Units 5 and 6 and Units 9 and 10 on October 1, 2013
Widows Creek	6	Scrubbers and SCRs on Units 7 and 8	· Retire two of Units 1-6 no later than July 31, 2013 · Retire two of Units 1-6 no later than July 31, 2014 · Retire two of Units 1-6 no later than July 31, 2015	· Idled Units 1-6 in October 2011 · Retired Units 3 and 5 on July 31, 2013

Note

(1) Selective catalytic reduction systems ("SCR").

The following table summarizes the additional 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	Requirements Under Environmental Agreements	Other Actions Taken or Planned to be Taken by TVA
Allen	3	SCRs on all three units	Install scrubbers or retire no later than December 31, 2018	Still evaluating what actions to take
Bull Run	1	Scrubber and SCRs on unit	Continuously operate current and any new emission control equipment · Remove from service, control <sup>(1)</sup> , convert <sup>(2)</sup> , or retire Units 1-4 no later than June 30, 2016	Continuously operate existing emission control equipment
Colbert	5	SCR on Unit 5	· Remove from service, control <sup>(1)</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 2013 · Retire Units 1-5 no later than June 30, 2016
Cumberland	2	Scrubbers and SCRs on both units	Continuously operate existing emission control equipment Control <sup>(1)</sup> , convert <sup>(2)</sup> , or retire all four units no later than December 31, 2017	Continuously operate existing emission control equipment
Gallatin	4	None	Control <sup>(1)</sup> , convert <sup>(2)</sup> , or retire all four units no later than December 31, 2017	Add scrubbers and SCRs on all four units by December 31, 2017
John Sevier	2	None		

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			<ul style="list-style-type: none"> <li>· Remove from service two units no later than December 31, 2012 and control<sup>(1)</sup>, convert<sup>(2)</sup>, or retire those units no later than December 31, 2015</li> </ul>	<ul style="list-style-type: none"> <li>· Idled Units 3 and 4 in December 2012</li> <li>· Units 3 and 4 will be retired by December 31, 2015</li> </ul>
Kingston	9	Scrubbers and SCRs on all nine units	Continuously operate existing emission control equipment	<ul style="list-style-type: none"> <li>Continuously operate existing emission control equipment</li> <li>· Upgraded scrubbers on Units 1 and 2 in 2012</li> <li>· Continuously operate emission control equipment on Units 1-3</li> </ul>
Paradise	3	Scrubbers and SCRs on all three units	<ul style="list-style-type: none"> <li>· Upgrade scrubbers on Units 1 and 2 no later than December 31, 2013</li> <li>· Continuously operate emission control equipment on Units 1-3</li> </ul>	<ul style="list-style-type: none"> <li>· The Board approved the construction of a gas-fired plant at the current location of the Paradise coal-fired plant</li> <li>· Retire Units 1 and 2 after completion of the gas-fired plant</li> <li>· Still evaluating what actions to take with respect to Units 1 and 4</li> </ul>
Shawnee	2	None	Control <sup>(1)</sup> , retire, or convert <sup>(2)</sup> Units 1 and 4 no later than December 31, 2017	<ul style="list-style-type: none"> <li>· Idled Shawnee Unit 10 in October 2010</li> </ul>
Widows Creek	2	Scrubbers and SCRs on Units 7 and 8	· Continuously operate existing emissions control equipment on Units 7 and 8	<ul style="list-style-type: none"> <li>· Continuously operate existing emissions control equipment on Units 7 and 8</li> <li>· Retire Unit 8 in the future</li> </ul>

Notes

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

(2) Convert to renewable biomass.

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As of September 30, 2010, TVA had 14,573 MW (Summer Net Capability) of coal-fired generation. After these planned actions TVA will have 9,098 MW (Summer Net Capability) of coal-fired generation.

TVA is planning to balance its coal-fired generation with lower-cost and cleaner energy generation technologies.

TVA's long-range plans will continue to attempt to balance the costs and benefits of significant environmental investments at its remaining coal-fired plants that do not have scrubbers and/or SCRs. TVA expects to decide whether to control, convert, or retire its remaining coal-fired capacity on a unit-by-unit schedule.

Transmission upgrades may be required to maintain reliability when some coal-fired units become inactive. TVA invested \$130 million in such upgrades between 2011 and 2013, and estimates future expenditures for transmission upgrades to accommodate inactive coal-fired units to be approximately \$350 million for 2014 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.

## Nuclear

TVA has three nuclear sites consisting of six units in operation. 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, 2013

Nuclear Unit	Status	Nameplate Capacity (MW)	Net Capacity Factor for 2013	Date of Expiration of Operating License	Date of Expiration of Construction Permits
Sequoyah Unit 1	Operating	1,221	97.0	2020*	—
Sequoyah Unit 2	Operating	1,221	73.7	2021*	—
Browns Ferry Unit 1	Operating	1,264	82.9	2033	—
Browns Ferry Unit 2	Operating	1,190	80.6	2034	—
Browns Ferry Unit 3	Operating	1,190	93.1	2036	—
Watts Bar Unit 1	Operating	1,270	88.7	2035	—
Watts Bar Unit 2	Under construction	1,220	—	—	2013*

\* An extension request has been submitted to the Nuclear Regulatory Commission. See Sequoyah License Renewal and Nuclear Reactor Licensing below.

Nuclear Regulatory Commission Safety Improvements Orders and Other Guidance. In March 2012, the Nuclear Regulatory Commission ("NRC") issued three new safety orders stemming from lessons learned from the events that occurred in 2011 at the Fukushima Daiichi Nuclear Power Plant ("Fukushima events"). The orders require (1) the development of strategies for responding to an interruption of off-site power, (2) the addition of more reliable instruments to measure water levels in cooling pools where spent nuclear fuel is stored, and (3) the installation of more robust containment venting systems to prevent containment failure due to overpressurization. The first two orders apply to every nuclear reactor in the U.S., including Watts Bar Unit 2, which will be required to comply prior to issuance of its operating license. The third order applies only to certain U.S. boiling water reactors, including Browns Ferry. These reactors are required to improve their containment venting systems to prevent over-pressurization due to the buildup of non-condensable gases such as hydrogen. TVA plans to fully implement the requirements of these three orders which were submitted to the NRC on February 28, 2013. TVA expects to complete the implementation of these orders by 2019, and the cost to comply with these orders is not expected to exceed \$220

million.

In addition to these orders, the NRC issued requests for information from U.S. nuclear operators regarding earthquake and flood risks and emergency planning. Based on the information provided in response to these requests, the NRC will determine if additional regulatory requirements are needed for these subjects. At this time, TVA is not able to predict the final outcome of these potential requirements or the associated costs; however, these amounts could be significant.

Since the Fukushima events, the NRC has also issued and adopted additional detailed guidance on the expected response capability to be developed by each nuclear plant site. TVA has developed plans and schedules for the development and implementation of strategies and physical plant modifications to address the actions outlined in this guidance for all of its plants, including Watts Bar Unit 2. The initial studies, including the required plant walkdowns, are expected to be complete in the first quarter of 2014. Flooding and seismic re-evaluations to determine any further plant modifications are scheduled for completion in mid 2015. In addition to the actions described above, TVA may be required to take further actions to comply with any additional regulatory action that the NRC takes in response to the Fukushima events.

Sequoyah License Renewal. TVA submitted the license renewal applications for both Sequoyah units to the NRC on January 7, 2013. If approved, the licenses for both units would be extended by an additional 20 years to 2040 for Unit 1 and

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2041 for Unit 2. The NRC's review of the applications is expected to take up to three years after their submission. It is possible that the timing of approval of the final license renewal applications could be impacted by the NRC suspension of final decisions on nuclear reactor licensing discussed below.

**Nuclear Reactor Licensing.** On August 7, 2012, the NRC suspended final decisions on nuclear reactor licensing in response to a ruling by the the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") that vacated the NRC's Waste Confidence Decision ("WCD") relating to the environmental impact of the long-term storage of nuclear waste. On September 6, 2012, in response to the ruling, the NRC directed the NRC staff to develop a generic Environmental Impact Statement ("EIS") to support an updated WCD rule, maintaining the option for the staff to conduct some analyses of waste confidence issues on a site-specific basis, if necessary. Licensing reviews and proceedings may currently continue, but final licenses will not be issued until the NRC completes its reassessment of the environmental impacts of the storage of nuclear waste. The delay of licensing decisions by the NRC could affect the unit currently under construction at Watts Bar Unit 2, the proposed construction of Bellefonte Unit 1, and the renewal of the licenses for the two units at Sequoyah. All of the procedures and inspections that happen prior to licensing will continue as usual.

**Operational Challenges.** See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Liquidity Challenges Related to Generation Resources, which discussion is incorporated herein by reference.

**Other Nuclear Matters.** See Fuel Supply — Nuclear Fuel below for a discussion of spent nuclear fuel and low-level radioactive waste, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Liquidity Challenges Related to Generation Resources for a discussion of challenges associated with the nuclear program, Note 20 — Contingencies for a discussion of TVA's nuclear decommissioning liabilities and the related trust and nuclear insurance, and Note 20 — Legal Proceedings for a discussion of legal and administrative proceedings related to TVA's nuclear program, which discussions are incorporated herein by reference.

## Hydroelectric and Other Renewable Energy Resources

**Conventional Hydroelectric Dams.** TVA maintains 29 conventional hydroelectric dams with 109 generating units throughout the Tennessee River system and one pumped-storage facility for the production of electricity. At September 30, 2013, these units accounted for 5,433 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 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, four hydroelectric dams owned by a third party on the Little Tennessee River and eight U.S. Army Corps of Engineers dams on the Cumberland River contribute to the TVA power system. See Weather and Seasonality.

In 1992, TVA began a Hydro Modernization Program to address reliability issues on its conventional hydroelectric units and on Raccoon Mountain Pumped-Storage Plant ("Raccoon Mountain"). At September 30, 2013, modernization had been completed on 55 conventional hydroelectric units and four pumped-storage units. These modernization projects resulted in 422 MW of increased capacity on the conventional 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, through its Hydro Modernization Program, continues to assess its remaining conventional hydroelectric units for opportunities to improve reliability and increase capacity.

**Raccoon Mountain Pumped-Storage Plant.** The four units at 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.

Inspections of the turbines in the four units of Raccoon Mountain during 2012 found cracking in the rotor poles and the rotor rims. Because the same type of cracking led to the catastrophic failure of a similar unit in Europe, the Raccoon Mountain units were taken out of service. Raccoon Mountain Unit 2 returned to limited service with a partially restacked rotor in October 2012, but was taken out of service again on January 3, 2013, due to a failed rotor pole clamp. All units are undergoing a maintenance overhaul and are expected to be returned to service in 2014. TVA is dispatching generation from other TVA units and purchasing power if needed to compensate for the loss in generating capacity.

**Other Renewable Energy Resources.** TVA's renewable energy portfolio includes both TVA owned assets and renewable energy purchases. TVA has 16 solar sites, capability for digester gas and biomass cofiring, and three wind turbines. At September 30, 2013, the wind turbines did not provide any summer net capability because they were not operational, and they do not appear to be economical for returning to operation. The digester gas cofiring capability is accounted for as coal-fired generation summer net capability. The solar sites provide less than one MW of summer net capability. See Power Supply — Purchased Power and Other Agreements for information on renewable energy power purchase contracts.



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## Natural Gas and/or Oil-Fired

At September 30, 2013, TVA operated 98 combustion turbine power blocks, 87 simple-cycle units and 11 combined-cycle power blocks. The 87 simple-cycle units provide a maximum of 5,388 MW of summer net capability. The 11 combined-cycle power blocks provide a maximum of 3,854 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 as well as the 10 combined-cycle power blocks are fueled by natural gas only. Seventy-six of the simple-cycle units are capable of quick-start response allowing full generation capability in approximately 10 minutes. TVA uses simple-cycle units as peaking or backup units. See 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, and/or lease.

## Diesel Generators

In February 2013, TVA sold its diesel generators located in Albertville, Alabama to the city of Albertville. At September 30, 2013, TVA had one diesel generator plant consisting of five units, and these facilities accounted for 9 MW of summer net capability.

## 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 2013, TVA acquired approximately 10 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 purchase), and approximately 89 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 2014 and 2032, and the most significant of these contracts are described below.

## Power Purchase Contracts (Excluding Wind Contracts)

At September 30, 2013

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

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, 2013, there were six suppliers, with a combined capacity of 913 MW, whose power TVA purchases under this law.

As of September 30, 2013, 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) under a twenty-year contract 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.



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## Renewable Wind Contracts

As of September 30, 2013

Location of Wind Farm	Wind Farm Nameplate Capacity (in MW)	Date Delivery Began
Illinois	300*	2010
Iowa	198	2010
Iowa	101	2012
Kansas	201	2012
Kansas	165	2013
Illinois	150	2012
Illinois	200	2012
Illinois	200	2013

## 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.

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, such as storage and smart grid, will be needed to address some of the operational issues associated with intermittent renewable energy sources 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. Known wind resource potential has increased recently due to studies showing reasonable wind speeds available at higher elevations in this area. If TVA is required to increase its use of renewable resources and the cost of doing so is greater than the costs of other sources of generation, TVA's costs may increase.

During the past three years, TVA supplemented its power generation through power purchases as follows:

## Purchased Power\*

For the years ended September 30

	2013	2012	2011	
Millions of kWh	18,848	25,294	27,168	
Percent of TVA's Total Power Supply	11.4	% 15.0	% 15.9	%

## Note

\* Purchased power amounts include generation from Caledonia Combined-Cycle Gas Plant, which is currently a leased facility operated by TVA. Additionally, purchased power amounts include generation from Magnolia Combined-Cycle Gas Plant for a portion of 2011. On August 31, 2011, TVA acquired Magnolia.

## Cleaner Energy Initiatives

TVA intends to balance production capabilities with power supply requirements by promoting the conservation and efficient use of electricity and, when necessary, buying, building and/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.

## Nuclear Generation

Watts Bar Unit 2. On August 1, 2007, the TVA Board approved the completion of Watts Bar Unit 2, which is expected to be completed in CY 2015 and to provide approximately 1,180 MW of summer net capability. The work on Watts Bar Unit 2 is continuing within the schedule and budget expectations approved by the TVA Board in April 2012. The current construction permit expired in March 2013. An extension to the permit has been requested and, by regulation, work is allowed to proceed. An extended construction permit is expected to be received from the NRC in the first quarter of 2014. The unit was approximately 80 percent complete at September 30, 2013.

The primary risks for the project are activities associated with physical project completion and regulatory and licensing issues. The risks include compliance with the NRC requirements resulting from the Fukushima events and resolution of the NRC's Waste Confidence Decision relating to the potential environmental impacts of storage of spent fuel at each reactor site. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Liquidity Challenges Related to Generation Resources.

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For a discussion of legal proceedings related to Watts Bar Unit 2, see Note 20 — Legal Proceedings — Case Involving the NRC Waste Confidence Decision on Spent Nuclear Fuel Storage and Administrative Proceedings Regarding Watts Bar Unit 2.

Bellefonte Unit 1. The incorporation of Watts Bar Unit 2 lessons learned into the Bellefonte Nuclear Plant ("Bellefonte") Unit 1 completion estimate has revealed some similar problems and inaccuracies. TVA finalized a new estimate to complete Bellefonte Unit 1 during the first quarter of 2014 putting the total estimated cost of completion in the range of \$7.5 billion and \$8.7 billion. Work at the site has been slowed to better allocate resources on nearer-term priorities as both budget and staffing levels for the project have been reduced in the 2014 budget. TVA believes that the resulting budgeting and staffing levels should be sufficient to preserve Bellefonte for potential future development. TVA plans to utilize its integrated resource planning process to help determine how Bellefonte best supports TVA's overall efforts to continue to meet customer demand with low-cost, reliable power.

Other Nuclear Initiatives. In November 2012, the Department of Energy ("DOE") announced a grant award to Babcock & Wilcox ("B&W"), in conjunction with TVA and Bechtel, for small modular reactor ("SMR") development. See Research and Development.

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 by increasing the amount of steam produced by the reactors. Additional fuel would be added to the reactors during each refueling outage to support the increased steam production. The NRC license for each reactor must be modified to allow reactor operation at the higher power level. TVA has submitted license amendment requests and is currently in discussions with the NRC on selected technical issues affecting EPU licensing. The result of these discussions may impact the amount of power level increase realized by the EPU. Completion of the licensing process will determine the final implementation schedule.

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

TVA, in cooperation with its customers, continues to implement a broad portfolio of energy efficiency and demand response ("EEDR") programs designed to help reduce long-term energy supply costs in the TVA service area. TVA realized 521 gigawatt hours ("GWh") and 560 GWh of energy efficiency savings in 2013 and 2012, respectively. EEDR is expected to remain a focus of TVA and to play an important role in the next Integrated Resource Plan. TVA's Green Power Switch® ("GPS") program is a voluntary program that supports the production of renewable energy by allowing consumers to purchase renewable energy. In 2000, TVA became the first utility in the Southeast to offer consumers the choice to purchase renewable energy. In 2012, GPS supported roughly 101,000 MWh of renewable energy. TVA is continuing to refine the program by testing two additional customer options. In the original Green Power Switch, consumers buy 150 KWh renewable energy blocks for \$4 a month. Supply includes Green-e certified renewable energy generated from TVA-owned and purchased solar, wind, digester gas, and landfill gas generation. The two pilot options are testing customer demand for a 100 percent solar option sourced from TVA's growing Green Power Providers supply as well as a lower priced bulk option for larger commercial and industrial customers. Supply for the bulk option is sourced from TVA-contracted renewable energy credits ("RECs") in the greater Southeastern region. Specifically, the pilot supply will be from the Tapoco Hydroelectric project owned by Brookfield Renewable Energy Partners.

In 2003, TVA developed a Generation Partners ("GP") pilot program to test the interest and feasibility of renewable consumer-owned generation as a source of power for TVA. Since 2009, TVA has seen the program grow from fewer than 80 installations to more than 1,500 installations in operation providing more than 77 MW of solar, wind, low-impact hydro, and biomass generation. Solar installations made up 66 MW. The GP pilot program ended on September 30, 2012, and was replaced with the Green Power Providers ("GPP") program, a permanent program that began October 1, 2012. As of September 30, 2013, the GPP program comprised more than 5 MW of operating

generation with over 4 MW of additional approved capacity that has yet to begin generating.

The Renewable Standard Offer ("RSO") program is a voluntary program that began in October 2010 to increase the amount of renewable energy generated in TVA's service territory. Under this program, TVA will purchase certain types of renewable energy at market rates from projects that meet the requirement of the RSO program as long as there is sufficient available capacity in the program. Solar, wind, and specific biomass projects are included in the program. Projects must be greater than 50 kilowatts ("kW"), but no greater than 20 MW in nameplate capacity. TVA accepted 97 MW of renewable capacity through calendar year 2012. This included a diverse portfolio of 13 total projects, including over 41 MW of solar, 18 MW of wind, 20 MW of biomass, and 18 MW of landfill gas or methane projects. TVA demonstrated its continued commitment to renewable energy by issuing an additional 100 MW under the RSO program in 2013. As of September 30, 2013, TVA had received applications for 22 MWs and expects to receive more before December 31, 2013.

The Solar Solution Initiative ("SSI") is a pilot program that began in February 2012 and 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. SSI is a targeted incentive that aims to support the existing local solar industry, while also serving as a recruitment tool for new industry in the Tennessee Valley region, adding investment and jobs. Under this successful program,

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TVA has accepted applications totaling 20 MW over the past two years and is currently not accepting additional applications. TVA is reviewing the pilot program and may extend the initiative after a thorough evaluation is completed.

## 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. 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)

	2013	2012	2011
Coal	\$1,890	\$1,824	\$2,315
Natural gas	504	527	265
Fuel oil	36	46	54
Nuclear fuel	317	319	261
Total fuel	\$2,747	\$2,716	\$2,895

## Note

\* Excludes effects of the fuel cost adjustment deferrals and amortization on fuel expense in the amounts of \$73 million, \$(36) million, and \$31 million for the years ended September 30, 2013, 2012, and 2011, respectively.

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)

	2013	2012	2011
Coal	3.07	3.18	3.17
Natural gas and fuel oil	3.89	3.19	3.96
Nuclear	0.61	0.58	0.53
Average fuel cost per kWh net thermal generation from all sources	2.15	2.08	2.21

## Note

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

(2) In 2012, TVA began allocating 50 percent of its Financial Trading Program gains and losses to fuel expense whereas in 2011 all of the FTP gains and losses were allocated to purchased power expense. In 2013, the allocation changed to 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 addition to TVA-owned generating facilities, TVA operates a plant under an operating lease agreement and also has tolling agreements under which it obtains electricity from outside suppliers. Under these agreements, TVA supplies the fuel to produce electricity. The following table indicates the cost of fuel supplied by TVA and also the average fuel expense per kWh for the years indicated:

Natural Gas Purchases for Non-TVA Owned Facilities<sup>(1)</sup>

For the years ended September 30

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	2013	2012	2011
Cost of fuel (in millions)	\$138	\$255	\$343
Average fuel expense (cents/kWh)	2.95	2.36	2.42

Note

(1) In 2012, TVA began allocating 50 percent of its FTP gains and losses to fuel expense whereas in 2011 all of the FTP gains and losses were allocated to purchased power expense. In 2013, the allocation changed to 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.

Coal

Coal consumption at TVA's coal-fired generating facilities during 2013 and 2012 was approximately 32 million tons and 29 million tons, respectively. At September 30, 2013, and 2012, TVA had 29 days and 28 days of system-wide coal supply at full burn rate, respectively, with net book values of \$374 million and \$402 million, respectively.



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TVA utilizes both short-term and long-term (longer than one year) coal contracts. During 2013, long-term contracts made up 88 percent of coal purchases and short-term contracts accounted for the remaining 12 percent. TVA plans to continue using contracts of various lengths, terms, and coal quality to meet its expected consumption and inventory requirements. During 2013, TVA purchased coal by basin as follows:

- 46 percent from the Illinois Basin;
- 39 percent from the Powder River Basin in Wyoming;
- 14 percent from the Uinta Basin of Utah and Colorado; and
- one percent from the Appalachian Basin of Kentucky, Pennsylvania, Tennessee, Virginia, and West Virginia.

Total system coal inventories were at or above target levels for most of 2013 due to lower than planned coal-fired generation. 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

	2013	2012	
Rail	6	% 7	%
Barge	21	% 20	%
Barge and rail combination	60	% 59	%
Truck	13	% 14	%

#### Natural Gas and Fuel Oil

During 2013, TVA purchased a significant amount of its natural gas requirements from a variety of suppliers under contracts with terms of up to two years and purchased substantially all of its fuel oil requirements on the spot market. Exposure to spot market volatility was managed through TVA's Financial Trading Program ("FTP").

The net book value of TVA's natural gas inventory was \$7 million at September 30, 2013, and 2012. The net book value of TVA's fuel oil inventory was \$113 million and \$99 million at September 30, 2013, and 2012, respectively. At September 30, 2013, all but 17 of TVA's combustion turbine units 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 five-year (2014-2018) 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.

USEC was TVA's supplier of enrichment services for uranium for fueling TVA's nuclear units. On May 24, 2013, USEC announced the cessation of enrichment activities at its Paducah, Kentucky facility. TVA has sufficient nuclear fuel inventory available to mitigate near-term supply risks, and also expects to be able to procure material at reasonable rates in the market for nuclear fuel.

TVA, the 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 2016. 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, 2013, and 2012, the net book value of this nuclear fuel was \$1.3 billion and \$1.2 billion, respectively.

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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, DOE and TVA entered into an interagency agreement to evaluate the potential use of MOX in reactors at Browns Ferry and Sequoyah. As part of the evaluation of MOX, TVA is participating as a cooperating agency in DOE's development of a supplemental EIS that addresses the potential use of MOX fuel in the TVA reactors. TVA could make a decision in 2014 on whether to continue to pursue the use of MOX fuel. At the earliest, based on the expected production rate of MOX, TVA could start using a small number of MOX fuel assemblies in TVA reactors after 2020. TVA's three criteria for implementing MOX 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.

Low-Level Radioactive Waste. Low-level radioactive waste ("radwaste") results from the normal operation of nuclear electrical generation units and includes such materials as disposable protective clothing, mops, and filters. TVA sends shipments of radwaste to burial facilities in Clive, 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. Under the Nuclear Waste Policy Act of 1982, TVA (and other domestic nuclear utility licensees) entered into a contract with the DOE for the disposal of spent nuclear fuel. Payments to the DOE are based upon TVA's nuclear generation and charged to nuclear fuel expense. Although the contracts called for the DOE to begin accepting spent nuclear fuel from the utilities by January 31, 1998, the DOE has yet to establish a permanent disposal site for spent nuclear fuel. TVA, like other nuclear utilities, stores spent nuclear fuel at its nuclear sites. TVA would have had sufficient space to continue to store spent nuclear fuel as originally scheduled in storage pools indefinitely had the DOE begun accepting spent nuclear fuel at the agreed upon time. The DOE's failure to do so in a timely manner required TVA to construct dry cask storage facilities at Sequoyah and Browns Ferry and to purchase special storage containers for the spent nuclear fuel. The Sequoyah and Browns Ferry dry cask storage facilities have been in use since 2004 and 2005, respectively, and are expected to provide storage capacity through 2026 at Sequoyah and 2018 at Browns Ferry. Watts Bar has sufficient storage capacity in its spent fuel pool to last until approximately 2015. In September 2010, the NRC announced its approval of final revisions to its WCD expressing the NRC's confidence that spent nuclear fuel can be safely stored for at least 60 years beyond the licensed life of any reactor and that sufficient repository capacity will be available when necessary. On June 8, 2012, the D.C. Circuit vacated the NRC's WCD relating to the long-term storage of nuclear waste. On September 6, 2012, in response to that ruling, the NRC directed the NRC staff to develop a generic EIS to support an updated WCD rule within 24 months, maintaining the option for the staff to conduct some analyses of waste confidence issues on a site-specific basis. A draft rule and EIS addressing the decision of the D.C. Circuit were issued for public comment in September 2013. Licensing reviews and proceedings may continue, but final licenses will not be issued until the NRC completes its reassessment of the storage of nuclear waste. See Power Supply — Nuclear Reactor Licensing.

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, and as a result, TVA received approximately \$35 million for costs incurred through 2004. By agreement with the United States, TVA subsequently recovered an aggregate of approximately \$72 million to offset dry cask storage costs incurred from 2005 through 2010. TVA entered into a settlement agreement with the United States in July 2011 that delineates recoverable and non-recoverable costs and that sets forth a claim submittal and review process. This settlement agreement expires on December 31, 2013, but it may be extended by mutual agreement. On February 15, 2013, TVA received \$12 million for its 2011 claim, and on July 30, 2013, TVA submitted a claim of nearly \$18 million for 2012 costs.

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.

The interagency agreement provides for irradiation services to be performed in Watts Bar Unit 1 and Sequoyah Units 1 and 2. TVA has provided irradiation services using only Watts Bar Unit 1 since 2003. TVA believes it can meet the DOE and the DOD tritium requirements using Watts Bar Unit 1 while maintaining Sequoyah reactors as backups.

#### Transmission

The TVA transmission system is one of the largest in North America. TVA's transmission system has 68 interconnections with 12 neighboring electric systems, and delivered nearly 165 billion kWh of electricity to TVA customers in

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2013. In carrying out its responsibility for grid reliability in the TVA service area, TVA has operated with 99.999 percent reliability over the last 14 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 power at wholesale in a manner that is comparable to TVA's own use of the transmission system. TVA has also adopted and operates in accordance with a published Standards of Conduct for Transmission Providers 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 the 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 over 100 mandatory standards subject to enforcement containing over 1,200 requirements and sub-requirements that must be met including the NERC revisions to the Transmission Planning ("TPL") Reliability Standards that were approved by FERC on October 17, 2013. Revisions to these standards as well as other standards under consideration, if approved, will require significant resource commitments in future years.

## 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 2013, TVA had 735, or 28 percent, more heating degree days and 354, or 17 percent, fewer cooling degree days than in 2012.

	2013	Percent Change	2012	Percent Change	2011
Combined degree days (normal 5,223)	5,095	8.1%	4,714	(14.9)%	5,541

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 32,572 MW on January 16, 2009, at 12 degrees Fahrenheit. As a result of a cold wave during the first week of January 2010, TVA set a number of energy demand records. A new total daily energy demand record of 701 GWh was set on January 8, 2010, and a total weekly energy demand record of 4,632 GWh was set for the seven-day period ended January 10, 2010, when TVA experienced an average demand of 27,574 MW per hour for the entire week.

After several years of dry weather and drought conditions in the TVA service area, rainfall totals improved in the Tennessee Valley during 2013 and 2012. Rainfall in the Upper Basin of the Tennessee Valley was 124 percent of normal for 2013 and 102 percent of normal in 2012. Also, runoff was 143 percent of normal in 2013 and 98 percent of normal in 2012. 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 39 percent in 2013 as compared to 2012, and decreased two percent in 2012 as compared to 2011. Conventional hydroelectric generation was approximately 126 percent of normal in 2013 and 90 percent of normal in 2012.

## 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.

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.

#### Research and Development

TVA makes investments in science and technological innovation to assist in meeting future challenges in key areas. These are identified as "Signature Technologies" wherein TVA is seeking to establish national leadership in research, development, and demonstration. TVA is currently focused on three Signature Technologies: SMRs, grid modernization ("smart grid") for transmission and distribution systems, and energy utilization technologies, with a particular emphasis on energy efficiency, load management, and electric transportation.

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TVA has chosen SMRs as one of three signature technologies that support TVA's technology innovation mission, and they could provide an important option for clean, base-load energy for TVA's customers. TVA is a member of the B&W Power America team, which the DOE selected in November 2012 for a grant award for the design and licensing of B&W mPower SMRs. Specifically, under a contract that TVA executed with B&W in February 2013, TVA, B&W, and Generation mPower, LLC (a B&W affiliate, minority owned by Bechtel), are preparing a license application to the NRC to license up to four B&W mPower™ SMRs at TVA's Clinch River Site in Roane County, TN. In April 2013, B&W and the DOE executed a cooperative agreement implementing the DOE award, under which TVA (through B&W) is reimbursed by the DOE for roughly half of its qualified site study and license development costs, retroactive to October 2012. Currently, TVA is performing site characterization work, including gathering meteorological data, surveying species and cultural and archeological resources, and studying site hydrology. To date, TVA has completed approximately 50 percent of the subsurface studies at the Clinch River site that are necessary to support the environmental review and NRC license application. TVA will not decide to submit the license application to the NRC until mid-2015, and would not make subsequent construction decisions regarding SMRs at the Clinch River site for several years thereafter.

TVA's grid modernization research goals are to advance the implementation of technology options identified from evolving grid modernization roadmaps which support TVA's transmission system and the LPCs' distribution systems. The focus is on developing and demonstrating technology options that help sustain reliability, lower costs, and mitigate risks for TVA and LPCs. Among the more significant efforts in this area are demonstrations of new power system sensing and control technologies that are designed to increase operator situational awareness, provide better control of power flows, and optimize asset management.

In the area of energy utilization, TVA's near-term concentration is on the development and maintenance of a pipeline of emerging energy efficiency and load management technologies for market and program readiness. TVA's efforts are directed towards demonstrating and validating the performance and reliability of new efficiency technology as well as the value of energy efficiency and load management technologies for both the consumer and the utility. Additionally, TVA is conducting demonstrations to support the development of an electric transportation and infrastructure business plan.

TVA also seeks to leverage research and development activities through partnerships with LPCs, the Electric Power Research Institute ("EPRI"), the DOE, Oak Ridge National Laboratory, other utilities, universities, 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. From October 1, 2012, through September 30, 2013, 62 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.

During 2013, TVA estimated its reservoir operations averted approximately \$750 million in flood damages.

### Environmental Stewardship Activities

TVA's mission includes managing the Tennessee River, its tributaries, and public 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. 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 some of 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, accepted 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



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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, 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 integrated 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 major industrial operations to locate in the Tennessee Valley, encourage the location and expansion of companies that provide quality jobs, prepare communities in the Tennessee Valley for economic growth, and offer support to help grow and sustain small businesses. 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. TVA's economic development efforts helped recruit or expand over 170 companies into the TVA service area during 2013. These companies announced capital investments of approximately \$5.0 billion and the expected creation and/or retention of over 52,000 jobs.

### 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 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 power at wholesale rates 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.

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Sections 221 and 222 of the FPA, applicable to all market participants, including TVA, prohibit (1) using manipulative or deceptive devices or contrivances in connection with the purchase or sale of power or transmission services subject to FERC's jurisdiction and (2) 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.

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.

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 market manipulation and price gouging situations if such sales are 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.

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 wastes. See Environmental Matters.

### 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.

### 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.

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### 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 coal-fired plants 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 coal-fired plants in the 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.** In July 2011, the EPA announced the final Cross State Air Pollution Rule ("CSAPR"). This rule was to replace the existing Clean Air Interstate Rule ("CAIR"), effective January 1, 2012. CSAPR was to regulate SO<sub>2</sub> and NO<sub>x</sub> emissions from upwind states that are negatively impacting ozone and fine particulate air quality in downwind states. The rule would have required greater SO<sub>2</sub> and NO<sub>x</sub> reductions than those achieved under CAIR. However, CSAPR was vacated by the D.C. Circuit and now is before the U.S. Supreme Court. CAIR remains in place pending the outcome of this litigation. The EPA has announced that it plans to proceed with a new rulemaking to address attainment of the 8-hour ozone standard. This future CSAPR rule should not have a significant impact on TVA because of the changes that TVA has made to its generation mix and the controls that TVA is installing on coal-fired units to comply with the new Mercury and Air Toxic Standards.

**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 will have minor impacts beginning in the second quarter of 2014 for 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 standards 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. Effective April 16, 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 may choose to idle or retire some units in lieu of investing in additional controls and may in some cases construct replacement generation. The Mercury and Air Toxic Standards are the primary drivers of additional emission controls for TVA's coal-fired plants over the next few years. The rule has been challenged in court, and the resolution of this litigation could affect the compliance dates and/or other requirements.

The Environmental Agreements. See Note 20 — Legal Proceedings — Environmental Agreements.

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.

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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 does not anticipate that this program has the potential to impact any unit other than Colbert Unit 5, which was idled in October 2013.

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 the EPA has proposed a rule to eliminate such exclusions. The proposed rule should be final in 2014, after which the states must modify their implementation plans by 2016. These new requirements could reduce flexibility and increase operational costs for TVA's coal-fired plants.

## 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 emission 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. There is no way to predict the likelihood or form of such legislation at this time.

Regulation. The Obama administration has promulgated a number of regulations that impose limitations upon emissions of GHGs, including CO<sub>2</sub> from power plants. The most important of these apply to major new sources of GHGs, including coal-fired and gas-fired power plants, and major modifications of existing plants. On October 15, 2013, the U.S. Supreme Court agreed to hear challenges to some of these rules after the D.C. Circuit upheld them.

The EPA proposed a GHG New Source Performance Standards ("NSPS") rule for new power plants on September 20, 2013. The Administration also announced on June 25, 2013, its plan to issue proposed carbon pollution standards for existing power plants by June 1, 2014, with a deadline of June 1, 2015, for finalizing the existing source standards. The form of these standards is uncertain, but is expected to build upon current efforts, include efficiency improvements, provide flexibility, and take advantage of a wide variety of energy sources and technologies. The states would then have to decide how to implement these existing source standards. The existing source standards are expected to be submitted by states to the EPA for its approval by June 30, 2016. The existing source standards could become effective by December 2016 with compliance required by affected plants possibly by 2019-2021.

Biomass CO<sub>2</sub> Emissions. On July 12, 2013, the D.C. Circuit vacated the EPA's biomass deferral rule, holding that the EPA did not have the authority to temporarily delay regulating biogenic CO<sub>2</sub> for three years pending the completion of its study to determine whether biogenic CO<sub>2</sub> emissions contribute to increases in CO<sub>2</sub> levels in the atmosphere. The EPA is expected to finalize this study by July 2014. In the interim, the regulation of biogenic CO<sub>2</sub> under the PSD and Title V programs of the CAA continues to remain uncertain.

Executive Orders. On June 25, 2013, the President released his Climate Action Plan, which includes a broad range of executive actions to mitigate U.S. carbon emissions, manage climate change adaptation efforts, and lead international

efforts.

Federal agencies currently have renewable energy consumption goals which originated in the Energy Policy Act of 2005 of three percent renewable energy consumption by 2007, five percent by 2010, and seven and one-half percent by 2013 and beyond. TVA's 2012 performance was nearly eight percent, exceeding the 2013 goal. The President's Climate Action Plan establishes a new goal of 20 percent of internally used electricity from renewable sources by 2020. At this time, the President's plan does not contain sufficient detail to determine how TVA may be impacted.

**International Accords.** International agreements and protocols 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. See Note 20 — Legal Proceedings — Case Arising out of Hurricane Katrina.

**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 Power Supply.



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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 2011, TVA issued a Statement on Climate Change Adaptation. In 2012, in accordance with Executive Order 13514, TVA prepared a Climate Change Adaptation Action Plan. TVA publicly released the 2012 Climate Change Adaptation Action Plan on February 8, 2013, and public comments were accepted through April 8, 2013. Future adaptation guidance is expected from OMB and the Council on Environmental Quality in the first quarter of 2014 that could impact TVA's adaptation planning processes. TVA cannot predict the content of the guidance at this time.

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, TVA has increased its nuclear capacity, modernized its hydroelectric generation system, increased its purchases of renewable energy, and invested 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 located in that state. Likewise, the Mississippi Public Service Commission adopted an energy efficiency rule applying to electric and natural gas providers in the 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.

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

### Water Quality Control Developments

Cooling Water Intake Structures. The EPA has proposed a rule implementing Clean Water Act §316(b) to reduce the impingement of fish and the entrainment of fish eggs and larvae by cooling water intake structures at existing plants that withdraw more than two million gallons-per-day. As proposed, impingement impacts would have to be reduced by no later than 2020, and entrainment impacts would have to be reduced as soon as possible based on site-specific analyses. Issuance of the final rule was extended to allow more time for the EPA to assess cost-benefits and complete consultation under the Endangered Species Act. The consultation under the Endangered Species Act could result in more stringent requirements for plants located on waters with protected species or their designated habitats.

Based upon a notice of data availability ("NODA"), the EPA is now considering identifying "model technologies" that would be designated as compliant with the impingement numeric limits. For TVA intakes, it is probable that installation of fish-friendly traveling screens and a fish return system will be required at most, if not all, coal-fired and nuclear plants. The EPA's NODA presented no additional discussion of entrainment requirements beyond those initially proposed; thus, the need for entrainment controls is expected to remain a site-specific determination made by the state-designated NPDES permit writer.

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 § 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 June 7, 2013, the EPA proposed revisions to the effluent guidelines for the steam electric power generating industry. The rule proposal focuses on stricter limitations on wastewater discharges from ash handling, air pollution control systems, and enhanced mercury air controls. Wastewater streams from air pollution control systems contain pollutants such as metals, total suspended solids, chlorides, and nutrients, which have typically been treated in settling ponds. The EPA identified four preferred alternatives which include numerical limits for each option. Depending on the stringency of the final rule, TVA likely would have to install additional wastewater treatment systems at its coal-fired plants, substantially increasing TVA's water pollution control costs. The EPA is required to finalize the rulemaking by May 2014.

**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 eleven 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. Four of the seven TVA coal-fired plants (Gallatin, Shawnee, 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

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increases in cost. 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.

**General 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 oil spills and other contamination that TVA is addressing. At September 30, 2013, 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 \$15 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 20 — Contingencies — Environmental Matters.

**Coal Combustion Residuals.** In May 2010, the EPA released the text of a proposed rule describing two possible regulatory options it is considering under RCRA for the disposal of CCRs generated from the combustion of coal by electric utilities and independent power producers. Under one option, CCRs would be regulated as a solid or special waste. Under the other option, CCRs would be regulated as a hazardous waste. Under either option, the EPA would regulate the construction of impoundments and landfills, and seek to ensure both the physical and environmental integrity of disposal facilities. CCRs include fly ash, bottom ash, boiler slag, and flue gas desulfurization materials. If the EPA decides to regulate CCRs as hazardous, the beneficial use of CCRs now sold by TVA and other utilities likely would be impacted, and this could result in requirements to remediate existing CCR management facilities at a substantial cost. The EPA has not announced which regulatory option it will take with respect to the management and disposal of CCRs. TVA is therefore unable to determine the effects of this proposed rule at this time. In April 2012, several environmental organizations filed suit against the EPA to compel the EPA to take action on the proposed rule. TVA cannot predict the outcome of this litigation.

**Kingston Ash Spill.** See Note 9 for a discussion of the environmental issues associated with the Kingston ash spill.

### Environmental Investments

From 1977 to 2013, TVA spent approximately \$5.6 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.** To reduce SO<sub>2</sub> emissions, TVA has installed scrubbers on 17 of its coal-fired units, and switched to lower-sulfur coals at 41 coal-fired units. In August 2011, the TVA Board approved adding scrubbers to four units at

Gallatin subject to completing appropriate environmental reviews. After these reviews were completed, TVA's Chief Executive Officer authorized proceeding with the proposed projects.

NO<sub>x</sub> Emissions. To reduce NO<sub>x</sub> emissions, TVA installed SCRs on 21 coal-fired units, installed selective non-catalytic reduction systems on two coal-fired units (although TVA is no longer operating one of these systems because of technical challenges), installed High Energy Reagent Technology systems on seven coal-fired units, installed low-NO<sub>x</sub> burners or low-NO<sub>x</sub> combustion systems on 46 coal-fired units, optimized combustion on 12 coal-fired units, and began operating NO<sub>x</sub> control equipment year round when units are operating (except during startup, shutdown, and maintenance periods) starting in October 2008. In addition, in August 2011, the TVA Board approved adding SCRs to four units at Gallatin subject to completing appropriate environmental reviews. After these reviews were completed, TVA's Chief Executive Officer authorized proceeding with the proposed projects.

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> and SO<sub>2</sub> on the TVA system have been reduced by 90 percent below peak 1995 levels and by 94 percent below 1977 levels, respectively. These controls also have provided a co-benefit of reducing hazardous air pollutants, including mercury, at some units. For CY 2012, TVA's emission of CO<sub>2</sub> from its sources was 81 million tons, a 23 percent reduction from 2005 levels. This includes 426 tons from units rated at less than 25

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MWs that are not required to report to the EPA. 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 now anticipates spending approximately \$1.3 billion through 2022 to add controls to its coal-fired units, which is less than the previous projection of \$2.3 billion. This results from increasing reliance on cleaner energy resources and the idling/ retirement of more coal-fired units which TVA otherwise would have had to control.

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, 2013

(in millions)

	Estimated Timetable	Total Estimated Expenditures
Site environmental remediation costs <sup>(2)</sup>	2014+	\$ 15
Coal combustion residual conversion and remediation <sup>(3)</sup>	2014-2023	1,400
Proposed clean air control projects <sup>(4)</sup>	2014-2022	1,300
Clean Water Act requirements <sup>(5)</sup>	2014-2022	700

Notes

(1) These estimates are subject to change as additional information becomes available and as 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 closure of impoundments, construction of lined landfills, and construction of dewatering systems.

(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, 2013, TVA had 12,612 employees, of whom 4,613 were trades and labor employees. Under the TVA Act, TVA is required to pay trades and labor workers hired by TVA and certain of its contractors the rate of wages for work of a similar nature prevailing in the vicinity where the work is being performed. 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 thus 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.

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 which may result in impacts to TVA, including

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but not limited to action or inaction related to the sovereign 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.

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.

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.

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 regulations may be revised or reinterpreted in a way that adversely affects TVA. Possible areas of future regulation include, but are not limited to, the following:

Greenhouse gases. Costs to comply with future regulation of 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. The federal government has proposed stronger regulations concerning coal combustion residuals, and state governments may impose additional regulations. These regulations may require TVA to make additional capital expenditures, increase operating and maintenance costs, or even lead it to shut down certain facilities.

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.



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

In certain circumstances, other federal entities may attempt to restrict TVA's ability to access or control its funds. For example, should the United States approach the national debt ceiling, the United States Treasury might, as part of an effort to control federal spending, attempt to require TVA to receive approval before TVA disburses funds.

Additionally, the Office of Management and Budget might, in the event that automatic spending cuts go into effect, attempt to require TVA to reduce its budget by a specified percentage. Such attempts to restrict TVA's ability to control or allocate funds could adversely affect its cash flows, results of operations, and financial condition, its relationships with vendors and counterparties, the way it conducts its business, and its reputation.

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 area. 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 may render some 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 facilities, may be unable to operate certain facilities, or may have to pay fines or penalties.

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.

The costs associated with remediating the Kingston ash spill as well as other CCR facilities may be significantly higher than TVA anticipates.

TVA estimates that the cost of remediating the Kingston ash spill will be between \$1.1 billion and \$1.2 billion. Actual costs could substantially exceed expected costs. Also, certain costs that are currently either not probable or reasonably estimable are not included in this estimate, such as future lawsuits, future claims, and costs associated with new laws and regulations. In addition, TVA expects to spend between \$1.5 billion and \$2.0 billion to convert its wet CCR facilities to dry collection facilities. Actual costs may substantially exceed expected costs.

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

At September 30, 2013, TVA's qualified pension plan had assets of \$7.2 billion compared to liabilities of \$11.5 billion. The qualified plan is mature with approximately 23,000 retirees or beneficiaries receiving benefits of more than \$600 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 employee demographics; rates of increase in compensation levels; rates of return on plan assets; discount rates used in determining future benefit obligations and required funding levels; 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 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.

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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, 2013, TVA had \$24.8 billion of Bonds outstanding (not including noncash items of foreign currency exchange loss of \$43 million and net discount on sale of Bonds of \$85 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 credit rating actions.

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.** 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.

**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, and 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.

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, droughts, floods, tornadoes, wars, national emergencies, terrorist activities, pandemics, and other similar destructive 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; 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 the public determines that nuclear power is less desirable 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 certain catastrophic events, such as droughts and floods, to occur more frequently in the Tennessee Valley region, which could adversely impact TVA.

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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.

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, evaluating the completion of Bellefonte Unit 1, 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 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 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.

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 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 conduct its business.

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 has resumed construction of Watts Bar Unit 2, which TVA anticipates will be placed in service in CY 2015. 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 and otherwise 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 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.

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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

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

TVA has been experiencing issues with certain of its nuclear power units, including some issues that the NRC has considered to be of high significance. If these issues continue or if TVA is unable to correct the problems, TVA might voluntarily shut down one or more units or be ordered to do so by the NRC. In either case, placing the unit(s) back into operation could be a lengthy and expensive process, and TVA's cash flows, results of operations, financial condition, and reputation may be negatively affected.

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 TVA, along with other utilities that operate nuclear facilities, to make substantial modifications at its nuclear facilities. Additionally, the NRC is requiring TVA to modify 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'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 TVA's newer assets have experienced manufacturing defects in essential equipment. If TVA's generation and transmission assets or their supporting infrastructure fail to operate as planned or 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;



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

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 not be able to meet its contractual obligations to deliver power;

May not be able to maintain the integrity or reliability of the transmission system at normal levels;

May have to remediate collateral damage caused by a failure of the assets or the supporting infrastructure;

May have to increase its efforts to reduce encroachments by vegetation onto transmission lines to comply with applicable regulations;

May be required to invest substantially to meet more stringent reliability standards; and

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.

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, and financial condition.

TVA's information technology assets may not operate as planned.

All technology systems, no matter how robust, are potentially vulnerable to failures or breaches on account of, among other things, defects in the systems, human error, or physical or cyber attacks. 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 cyber attacks. Cyber attacks may target, among other things, TVA's generation facilities, transmission infrastructure, information technology systems, and network infrastructure. TVA's operations are extensively computerized, so a failure or breach of its information technology assets, whether caused by a cyber attack or otherwise, may 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 organizational transformation efforts may fail.

TVA has been working to improve its control systems, operating standards, and corporate culture. The failure to achieve or maintain improvements in these areas may contribute to the likelihood of incidents such as significant environmental events, delays in construction projects, or other operational or financial challenges that could adversely affect TVA's cash flows, results of operations, and financial condition.

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, or the perception of such acts or omissions, 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, and may potentially lead to the imposition of additional laws and regulations that negatively affect the way TVA conducts its business.

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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.

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, the forecasted demand for electricity, and the expense of adding additional 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 flows, results of operation, financial condition, and reputation.

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 in order 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 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.

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. An extension of the salary freeze for federal employees may aggravate this issue.

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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 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.** Prices of commodities critical to TVA's operations, including coal, uranium, natural gas, fuel oil, crude oil, construction materials, emission allowances, and electricity, have been extremely volatile in recent years. If prices of these commodities increase, TVA's rates may increase.

**Investment Price Risk.** TVA is exposed to investment price risk in the NDT, its Asset Retirement Trust ("ART"), 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.

**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 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.

On account of the Dodd-Frank Wall Street Reform and Consumer Protection 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. 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.

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 alternative 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 TVA is not authorized to issue equity securities.

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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. Accordingly, 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 government, may be impacted if the sovereign credit ratings of the United States are downgraded. This occurred in August 2011, when one rating agency lowered its long-term rating on the United States and then lowered TVA's rating based on the application of the rating agency's government-related entities criteria. Among other things, an additional or further downgrade of the United States's sovereign credit ratings could have the following effects:

TVA's own credit ratings could be downgraded as a result of a downgrade of the United States's credit ratings.

The economy could be negatively impacted, resulting in reduced demand for electricity, increased expenses for borrowings, and increased cost of fuels, supplies, and other material required for TVA's operations.

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

Additional or further 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 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 may result in TVA's having to post collateral under certain physical and financial contracts that contain rating 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, 2013, there were \$0.8 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 in lieu of letters of credit.

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 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.



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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. Appointment of 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.

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.

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.

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, 2013, TVA-operated generating assets consisted of 46 active coal-fired units and 14 inactive coal-fired units, 6 nuclear units, 109 conventional hydroelectric units, four pumped-storage units (all out of service at September 30, 2013, although they are expected to be returned to service later in 2014), 11 combined-cycle power blocks, 87 simple-cycle units (with four units out of service), 5 diesel generator units, one wind energy site (out of service), and 16 solar sites. In addition, TVA has biomass cofiring potential at its coal-fired sites. See Item 1, Business — Power Supply — Net Capability for a chart that indicates the location, capability, and in-service dates for certain of these properties, which chart is incorporated by reference into this Item 2, Properties. As of September 30, 2013, 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 — Cleaner Energy Initiatives.

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### 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, 11,400 circuit miles of 161 kilovolt, and 2,200 circuit miles of other voltage transmission lines;
- 513 transmission substations, power switchyards, and switching stations; and
- 1,278 customer connection points (customer, generation, and interconnection).

At September 30, 2013, 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:

- 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.
- 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.

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

In addition, 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.

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For a discussion of Legal Proceedings involving TVA, see Note 20 — Legal Proceedings, which discussion is incorporated by reference into this Item 3.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

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

Not applicable.

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## ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data for the years 2009 through 2013 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 2009, 2010, and 2011 financial statement presentations to conform to the 2012 and 2013 presentations.

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

For the years ended, or at, September 30

(dollars in millions)

	2013	2012	2011	2010	2009
Sales (millions of kWh)	161,925	165,255	167,730	173,662	163,804
Peak load (MW)	28,726	31,098	31,434	31,778	32,572
Operating revenues	\$10,956	\$11,220	\$11,841	\$10,874	\$11,255
Fuel expense	\$2,820	\$2,680	\$2,926	\$2,092	\$3,114
Purchased power expense	\$1,027	\$1,189	\$1,427	\$1,127	\$1,631
Operating and maintenance expense	\$3,428	\$3,510	\$3,617	\$3,232	\$2,395
Net interest expense	\$1,226	\$1,273	\$1,305	\$1,294	\$1,272
Net income	\$271	\$60	\$162	\$972	\$726
Construction expenditures	\$2,051	\$2,119	\$2,417	\$2,015	\$1,793
Total assets	\$46,106	\$47,334	\$46,393	\$42,753	\$40,017
Financial obligations					
Long-term debt, net <sup>(3)</sup>					
Long-term power bonds, net	\$22,315	\$20,269	\$22,412	\$22,389	\$21,788
Long-term debt of variable interest entities	\$1,311	\$981	\$—	\$—	\$—
Total long-term debt, net	\$23,626	\$21,250	\$22,412	\$22,389	\$21,788
Current debt, net <sup>(3)</sup>					
Short-term debt, net	\$2,432	\$1,507	\$482	\$27	\$844
Current maturities of power bonds	\$32	\$2,308	\$1,537	\$1,008	\$8
Current maturities of long-term debt of variable interest entities	\$30	\$13	\$—	\$—	\$—
Total short-term debt, net	\$2,494	\$3,828	\$2,019	\$1,035	\$852
Total debt <sup>(3)</sup>	\$26,120	\$25,078	\$24,431	\$23,424	\$22,640
Capital leases <sup>(4)</sup>	\$43	\$35	\$5	\$47	\$77
	\$40	\$—	\$—	\$—	\$—

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

Leaseback obligations	\$761	\$1,203	\$1,282	\$1,353	\$1,403
Energy prepayment obligations	\$510	\$612	\$717	\$822	\$927

Notes

(1) See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations for a description of special items in 2013, 2012, and 2011 affecting results in those years.

(2) See Item 1A, Risk Factors and Note 20 for a discussion of risks and contingencies that could affect TVA's future financial results.

(3) See Note 8, Note 10 — Membership Interests of VIE Subject to Mandatory Redemption and Note 12 — Debt Outstanding.

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



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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, 2013 (the "Annual Report"). The MD&A includes the following sections:

• **Business and Vision** - a general description of its business, its objectives, its strategic priorities, and its core capabilities;

• **Executive Overview** - a general overview of TVA's activities and results of operations for 2013;

• **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 overview of financial position;

• **Key Initiatives and Challenges** - an overview of current and future 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 Vision**

**Business**

TVA operates the nation's largest public power system. At September 30, 2013, TVA provided electricity to approximately 50 large industrial customers, six 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 2013 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:

1. TVA is a government corporation.
2. The area in which TVA sells power is limited by the Tennessee Valley Authority Act of 1933, as amended (as amended, the "TVA Act"), under a provision known as the "fence"; however, another provision of federal law known as

the “anti-cherrypicking” 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.

3. 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.

4. 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.

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## TVA's Renewed Vision

While TVA's mission has not changed since it was established in 1933, the environment in which TVA operates continues to evolve. The business and economic environment has become more challenging due to economic conditions, tougher new environmental standards, the need to modernize its generating fleet, and changing customer needs. In 2010, the TVA Board adopted a renewed vision to help TVA lead the Tennessee Valley region and the nation toward a cleaner and more secure energy future, relying more on nuclear power and energy efficiency and less on coal. With this renewed vision, TVA intends to be:

- The nation's leader in improving air quality;
- The nation's leader in increased nuclear production; and
- The Southeast's leader in increased energy efficiency.

In 2011, TVA completed an Integrated Resource Plan ("IRP") which recommended a planning direction consistent with TVA's Environmental Policy and fully supports TVA's renewed vision. The IRP guides TVA in meeting its customers' power needs while addressing the substantial challenges facing the electric utility industry. The recommended planning direction provides flexibility to make sound choices as economic and regulatory changes occur. Resource recommendations in the plan balance costs, energy efficiency, system reliability, and environmental responsibility for TVA's stakeholders. TVA is currently undertaking a refresh of the 2011 IRP with the new report expected to be published in 2015.

TVA's vision 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 Vision to Performance

During 2013, TVA set measures and evaluated its operational performance by focusing on seven key indicators. The 2013 results compared with targets for these key indicators are reflected in the following chart.

Corporate Measure	Results Achieved	Threshold	Target	Stretch
Corporate total spend (\$ millions)	\$766	\$809	\$792	\$774
Total financing obligations over productive assets	75.3%	75.6%	75.2%	74.8%
Nuclear operating availability factor	96.8%	96.1%	97.2%	98.1%
Critical coal seasonal equivalent forced outage rate	5.3%	7.1%	4.6%	2.5%
Combined cycle seasonal equivalent forced outage rate	7.6%	3.6%	2.7%	1.6%
Clean energy percentage	49%	41%	43%	45%
Safe workplace (recordable injuries/hours worked)	.46	1.01	.86	.71

TVA added the clean energy percentage measure in 2013. The measure reflects TVA's commitment to be a leader in cleaner energy as stated in its vision. Nuclear generation, energy efficiency and renewable energy (wind, biomass, solar and hydro) purchases/generation are expressed as a percentage of all purchased power and TVA-operated

generation.

#### Executive Overview

Demand for electricity is contingent on a variety of factors including the economy, weather patterns, and customer usage. The continuing weak economy, loss of a major customer, and growing adoption of energy conservation by customers has resulted in lower demand for TVA power. Although weather patterns were closer to normal for the year ended September 30, 2013 as compared to the same period of 2012, sales were two percent lower primarily due to TVA's largest directly served customer ceasing operations in May 2013 and to a lesser extent from the slow economic recovery in the Tennessee Valley. This decrease in demand from customers contributed to an increase in off-system sales as a result of having excess generation available for resale during 2013.

TVA's net income for the years ended September 30, 2013 and 2012, was \$271 million and \$60 million, respectively. Base revenue decreased \$230 million for the year ended September 30, 2013, as compared to the same period of 2012. Revenue from the recovery of fuel costs decreased \$55 million for the year ended September 30, 2013, as compared to the

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same period of 2012 due in part to higher hydroelectric generation. TVA's 29 hydroelectric dams produced more electricity in 2013 than any year in the agency's 80-year history.

Fuel and purchased power costs decreased for the year ended September 30, 2013, as compared to the same period of 2012 primarily due to increased hydroelectric generation resulting from increased rainfall and runoff during 2013 as compared to 2012. The increase in hydroelectric generation helped to mitigate the increase in fuel costs and lessen the need to purchase power to meet demand. Operating and maintenance costs decreased for the year ended September 30, 2013, as compared to the same period of 2012 primarily due to costs related to post-employment benefits and the timing and duration of outage and maintenance work on nuclear and fossil units. Depreciation expense was also lower during 2013 than 2012 primarily due to the effects of accelerated depreciation of coal-fired units which were idled prior to or early in 2013.

TVA's nuclear program continues to focus on resolving several regulatory items including implementing the orders and guidance stemming from the lessons learned from the events that occurred in 2011 at the Fukushima Daiichi Nuclear Power Plant ("Fukushima events"), implementing fire protection program changes at Browns Ferry Nuclear Plant ("Browns Ferry"), resolving the Nuclear Regulatory Commission ("NRC") finding of "high safety significance" and other findings at Browns Ferry, and resolving NRC findings around Sequoyah Nuclear Plant ("Sequoyah") and Watts Bar Nuclear Plant ("Watts Bar") hydrology. TVA's nuclear program is also focused on ensuring a seamless integration of Watts Bar Unit 2, which is under construction, into the existing nuclear fleet.

Near-term, TVA is initiating a series of actions to mitigate the effects of lower demand, uncertain weather patterns and operational and environmental challenges resulting in rate pressures. Projecting slower to no growth in the near future, TVA is making operational changes to its generating fleet, continuing cost reduction initiatives across all business units, including staffing reduction recommendations resulting from a recently-conducted organizational study, and other initiatives with a goal of keeping its rates competitive. TVA's priorities for 2014 and beyond include bringing operating and maintenance expenses in line with revenues, completing Watts Bar Unit 2, evaluating the remainder of its coal-fired fleet, preserving Bellefonte Nuclear Plant ("Bellefonte") as an option for future generation, continuing to explore small modular reactor technology, updating its Integrated Resource Plan, and focusing on attracting and retaining jobs for the Tennessee Valley region. The TVA Board approved a non-fuel base rate increase on wholesale rates for 2014 at its August 2013 board meeting which is intended to generate \$190 million in additional revenues.

Longer-term, TVA faces challenges related to fluctuating fuel prices and compliance with current and emerging environmental laws and regulations. In order to comply with these laws and regulations, TVA may install clean air equipment on coal-fired units and replace generating capacity of idled/retired coal-fired units with cleaner-emissions nuclear and gas-fired units. Meeting these needs will require significant capital expenditures on TVA's part. TVA plans to meet these needs through a combination of Bonds, alternative financing arrangements, operating efficiency initiatives, and rates. Although TVA is constrained by the TVA Act, which authorizes TVA to issue Bonds in an amount not to exceed \$30.0 billion outstanding at any one time, TVA management believes that the challenges described above can be met without this limit becoming an issue.

## Results of Operations

### Sales of Electricity

Sales of electricity accounted for virtually all of TVA's operating revenues in 2013, 2012, and 2011. 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.

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The following table compares TVA's energy sales statistics for the years ended September 30, 2013, 2012, and 2011:

Sales of Electricity

For the years ended September 30

(millions of kWh)

	2013	Percent Change	2012	Percent Change	2011
Local power companies	132,154	0.2	% 131,885	(3.8	)% 137,042
Industries directly served	26,016	(14.6	)% 30,446	6.6	% 28,563
Federal agencies and other	3,755	28.4	% 2,924	37.6	% 2,125
Total sales of electricity	161,925	(2.0	)% 165,255	(1.5	)% 167,730

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.

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## 2013 Compared to 2012

## Degree Days

	2013	Normal <sup>(1)</sup>	Percent Variation	2012	Normal <sup>(1)</sup>	Percent Variation	2013	2012	Percent Change
Heating Degree Days	3,333	3,360	(0.8 )%	2,598	3,381	(23.2 )%	3,333	2,598	28.3 %
Cooling Degree Days	1,762	1,863	(5.4 )%	2,116	1,863	13.6 %	1,762	2,116	(16.7 )%
Total Degree Days	5,095	5,223	(2.5 )%	4,714	5,244	(10.1 )%	5,095	4,714	8.1 %

## Note

(1) This calculation is updated every five years in order to incorporate the then most recent 30 years. It was last updated in 2011. The 2013 Normal Heating Degree days differ from 2012 due to the occurrence of a leap year in 2012.

Sales of electricity decreased 3.3 billion kilowatt hours ("kWh") for the year ended September 30, 2013, compared to the year ended September 30, 2012, primarily due to a decrease in demand from industries directly served. The reduced demand was largely the result of a decrease in demand by TVA's largest directly served industrial customer, which began ceasing operations during the third quarter of 2013 (see 2013 Key Initiatives and Challenges — Customers/Counterparties Risk). 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.

## 2012 Compared to 2011

## Degree Days

	2012	Normal <sup>(1)</sup>	Percent Variation	2011	Normal <sup>(1)</sup>	Percent Variation	2012	2011	Percent Change
Heating Degree Days	2,598	3,381	(23.2 )%	3,418	3,360	1.7 %	2,598	3,418	(24.0 )%
Cooling Degree Days	2,116	1,863	13.6 %	2,123	1,863	14.0 %	2,116	2,123	(0.3 )%
Total Degree Days	4,714	5,244	(10.1 )%	5,541	5,223	6.1 %	4,714	5,541	(14.9 )%

## Note

(1) This calculation is updated every five years in order to incorporate the then most recent 30 years. It was last updated in 2011. The 2012 Normal Heating Degree days differ from 2011 due to the occurrence of a leap year in 2012.

Sales of electricity decreased 2.5 billion kWh for the year ended September 30, 2012, compared to the year ended September 30, 2011, primarily due to a decrease in demand by LPCs. The reduced demand was largely the result of the milder than normal winter during 2012, as compared to the relatively normal winter during 2011. Heating degree days were 23.2 percent below normal during 2012, compared to 1.7 percent above normal during 2011. The customers of LPCs are largely residential and commercial customers whose usage of electricity is typically more temperature-sensitive than that of industrial customers. The decrease in sales of electricity to LPCs during this same period was partially offset by increased demand from industries directly served, primarily by TVA's largest directly

served industrial customer, and increased sales to off-system customers.

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## Financial Results

The following table compares operating results for 2013, 2012, and 2011:

## Summary Consolidated Statements of Operations

	2013	2012	2011
Operating revenues	\$10,956	\$11,220	\$11,841
Operating expenses	9,503	9,920	10,404
Operating income	1,453	1,300	1,437
Other income, net	44	33	30
Net interest expense	1,226	1,273	1,305
Net income	\$271	\$60	\$162

Operating Revenues. Operating revenues for 2013, 2012, and 2011 consisted of the following:

Operating Revenues	2013	Percent Change	2012	Percent Change	2011
Electricity sales					
Local power companies	\$9,463	(0.5 )%	\$9,506	(6.3 )%	\$10,144
Industries directly served	1,199	(16.9 )%	1,442	0.1 %	1,440
Federal agencies and other	167	21.0 %	138	(0.7 )%	139
Electricity sales	10,829	(2.3 )%	11,086	(5.4 )%	11,723
Other revenue	127	(5.2 )%	134	13.6 %	118
Total operating revenues	\$10,956	(2.4 )%	\$11,220	(5.2 )%	\$11,841

In April 2011, TVA implemented a revised wholesale rate structure. The rate structure 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 the revised wholesale 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. In conjunction with the change, the rate structure was also revised to establish 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 2013 vs. 2012	Variance 2012 vs. 2011
Fuel cost recovery	\$(55 )	\$(355 )
Base revenue	(230 )	(294 )
Other	21	28
Total	\$(264 )	\$(621 )

## 2013 Compared to 2012

Operating revenues decreased \$264 million for the year ended September 30, 2013, compared to the year ended September 30, 2012. The change was primarily due to a \$230 million decrease in base revenue and a \$55 million decrease in fuel cost recovery. The decrease in base revenue was attributable to a decrease in the effective base rate and lower sales of electricity. Partially offsetting these decreases was a slight increase in other revenue sources.



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## 2012 Compared to 2011

Operating revenues decreased \$621 million for the year ended September 30, 2012, compared to the year ended September 30, 2011. The change was primarily due to a \$355 million decrease in fuel cost recovery and a \$294 million decrease in base revenue. Partially offsetting these decreases was a slight increase in other revenue sources. Of the \$355 million decrease in fuel cost recovery, \$269 million was due to lower fuel rates and \$86 million was due to lower sales of electricity. Lower demand as a result of milder weather conditions was the primary driver of the decrease in base revenues and accounted for \$209 million of the change.

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 expenses for 2013, 2012, and 2011 consisted of the following:

## Operating Expenses

For the years ended September 30

	2013	Percent Change	2012	Percent Change	2011		
Fuel	\$2,820	5.2	% \$2,680	(8.4	)% \$2,926		
Purchased power	1,027	(13.6	)%	1,189	(16.7	)%	1,427
Operating and maintenance	3,428	(2.3	)%	3,510	(3.0	)%	3,617
Depreciation and amortization	1,680	(12.5	)%	1,919	8.3	%	1,772
Tax equivalents	548	(11.9	)%	622	(6.0	)%	662
Total operating expenses	\$9,503	(4.2	)%	\$9,920	(4.7	)%	\$10,404

The following table summarizes TVA's net generation and purchased power in millions of kWh by generating source and the percentage of all electric power generated and purchased for the periods indicated:

## Power Supply from TVA-Operated Generation Facilities and Purchased Power

For the years ended September 30

(millions of kWh)

	2013		2012		2011		
Coal-fired	62,519	38	% 58,584	34	% 74,583	44	%
Nuclear	52,100	32	% 55,244	33	% 49,562	29	%
Hydroelectric	18,178	11	% 12,817	8	% 12,706	7	%
Natural gas and/or oil-fired	13,102	8	% 16,650	10	% 6,809	4	%
Renewable resources (non-hydro)	9	—	% 25	—	% 17	—	%
Total TVA-operated generation facilities	145,908	89	% 143,320	85	% 143,677	84	%
Purchased power	18,848	11	% 25,294	15	% 27,168	16	%
Total power supply	164,756	100	% 168,614	100	% 170,845	100	%

## 2013 Compared to 2012

Fuel expense increased \$140 million for the year ended September 30, 2013, as compared to the prior year, primarily due to the utilization of more expensive generation resources. During 2013, TVA completed four nuclear refueling outages on units at Watts Bar, Browns Ferry, and Sequoyah, which included a steam generator replacement project, compared to two nuclear refueling outages on units at Browns Ferry and Sequoyah during the prior year. This contributed to a six percent decrease in nuclear generation. A seven percent increase in coal-fired generation helped offset the decrease in nuclear generation and contributed to a \$197 million increase in fuel expense due to the higher price of coal as compared to nuclear fuel. While coal-fired generation contributed to the pricing variance, this was partially offset by a 39 percent increase in conventional hydroelectric generation, as a result of a 22 percent increase in

rainfall and a 45 percent increase in runoff within the Upper Basin of the Tennessee Valley, and by a reduction in volume from lower sales of electricity of two percent, which decreased fuel expense by \$57 million.

Purchased power expense decreased \$162 million during the year ended September 30, 2013, as compared to the prior year, primarily due to a 25 percent decrease in the volume of power purchased. Higher market prices for natural gas contributed to the volume decrease, as TVA's primary source of purchased power is natural gas-fired generation. In addition, higher market prices for natural gas resulted in lower realized losses from TVA's financial trading program.

Hydroelectric

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generation also helped to mitigate the need to purchase power to meet demand. Lower volume reduced purchased power expense by \$303 million, but the higher market prices for the power that was purchased offset this reduction by \$141 million.

Operating and maintenance expense decreased \$82 million in 2013 as compared with 2012. The decrease was primarily attributable to a \$66 million decrease in coal-fired operations due to approximately 560 fewer outage days for coal-fired units compared with prior year. In addition, scheduled maintenance expense decreased \$58 million in 2013 as compared with 2012 in part due to the retirement or idling of less efficient units during 2012 and the first quarter of 2013. The decrease was also due to a \$60 million decrease in costs related to post-employment benefits primarily due to the increase in the discount rate assumption used in the actuarial valuation of the liability related to workers' compensation claims. These decreases were partially offset by a \$99 million increase in nuclear expense related to an increase in the number of planned nuclear refueling outages and projects in 2013 as compared with prior year.

Depreciation and amortization expense decreased \$239 million in 2013 as compared with 2012, primarily due to a decrease 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 \$49 million for the year ended September 30, 2013, compared with \$308 million for the year ended September 30, 2012.

Tax equivalents expense decreased \$74 million in 2013, compared to the same period of the prior year. This change primarily reflects a decrease in gross revenues from the sale of power (excluding sales or deliveries to other federal agencies and off-system sales with other utilities) during 2012 compared to 2011, as tax equivalent payments are calculated based on the previous year's results.

2012 Compared to 2011

Fuel expense decreased \$246 million for the year ended September 30, 2012, as compared to the prior year. Overall favorable fuel rates, as a result of the change in the mix of generation resources, accounted for \$235 million of the decrease. Coal-fired generation decreased 21 percent while natural gas-fired generation was 145 percent higher as compared to the prior year. This increase was primarily due to greater capacity as a result of the acquisition of the Magnolia Combined-Cycle Gas Plant ("Magnolia") and the completion of the John Sevier Combined Cycle Facility ("John Sevier CCF") and was also due to the increased use of natural gas-fired generation as a result of lower gas prices. The average Henry Hub natural gas spot price in 2012 was \$2.73 per mMBtu, which was 34 percent lower than the average price for the prior year. Nuclear generation also helped offset the reduction in coal-fired generation as it increased 11 percent compared to the prior year due to fewer refueling outages. Lower sales of electricity led to a decrease in overall generation, which accounted for the remaining \$11 million of the decrease in fuel expense.

Purchased power expense decreased \$238 million in 2012 from 2011 primarily due to a decrease in the average price of purchased power of 11 percent, which was largely the result of favorable natural gas prices. Lower natural gas prices reduced purchased power expense by \$140 million. In addition, purchased power volume decreased by seven percent, primarily as a result of TVA using its own sources of generation as opposed to purchasing power. This reduced purchased power expense by \$98 million in 2012 as compared to the prior year.

Operating and maintenance expense decreased \$107 million in 2012 from 2011. The primary drivers of this decrease were a reduction of \$53 million in nuclear operation expenses due to fewer nuclear refueling outages in 2012, as compared to the prior year, and a decrease in contractor and consultant expense of \$37 million. The decrease in contractor and consultant expense was primarily the result of cost savings initiatives undertaken in 2012 in order to offset lower sales and revenues. Other cost saving initiatives undertaken during 2012 included the identification of productivity enhancements to improve the overall cost effectiveness of existing programs and projects as well as

project prioritization and reductions in discretionary spending.

Depreciation and amortization expense increased \$147 million in 2012 over 2011 primarily due to additional depreciation of \$308 million on certain idled coal-fired units and due to depreciation expense on net plant additions. These increases were partially offset by a \$155 million decrease in amortization expense due to the treatment of certain regulatory assets as a result of the approval of Bellefonte Unit 1 in August 2011. See Note 1 — Property, Plant, and Equipment, and Depreciation.

Tax equivalent expense decreased \$40 million in 2012 as compared to 2011. This change is primarily attributable to the increase in the fuel cost-related tax equivalent regulatory liability in 2011 as compared to 2010. The fuel cost-related tax equivalent regulatory liability, which is equal to five percent of the fuel-cost related revenues, increased in 2011 due to the wholesale rate structure implemented on April 1, 2011. Tax equivalent expenses related to fuel cost-related revenues are recognized in the same period the revenues are recognized. Tax equivalent expenses related to all other revenues are recognized in the year paid.

TVA calculates tax equivalent expense by subtracting the prior year fuel cost-related tax equivalent regulatory liability from the tax equivalent payments made to the states and counties and then adding back the current year fuel cost-related tax equivalent liability.

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Interest Expense. Interest expense and interest rates for 2013, 2012, and 2011 were as follows:

## Interest Expense

For the years ended September 30

	2013	Percent Change	2012	Percent Change	2011	
Interest expense <sup>(1)</sup>						
Interest expense	\$ 1,394	(3.5	)% \$ 1,444	0.9	% \$ 1,431	
Allowance for funds used during construction and nuclear fuel expenditures	(168	) (1.8	)% (171	) 35.7	% (126	)
Net interest expense	\$ 1,226	(3.7	)% \$ 1,273	(2.5	)% \$ 1,305	
	2013	Percent Change	2012	Percent Change	2011	
Interest rates (average)						
Long-term outstanding power bonds <sup>(2)</sup>	5.725	% (2.3	)% 5.860	% 1.1	% 5.799	%
Long-term debt of VIE	4.824	% (1.0	)% 4.874	% 100.0	% —	%
Membership interests of variable interest entity subject to mandatory redemption	6.887	% 100.0	% —	% —	% —	%
Discount notes	0.078	% (1.3	)% 0.079	% (42.3	)% 0.137	%
Blended	5.273	% (5.7	)% 5.589	% (2.2	)% 5.712	%

## Notes

(1) Interest expense includes interest on long-term debt obligations, including amortization of debt discounts, issuance, and reacquisition costs, net.

(2) The average interest rates on long-term debt obligations reflected in the table above 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.

## 2013 Compared to 2012

Net interest expense decreased \$47 million for the year ended September 30, 2013. This was primarily attributable to a decrease in interest expense of \$78 million as a result of a decrease in the average interest rate of TVA's outstanding debt. This was partially offset by a \$31 million increase primarily due to the amortization of debt reacquisition cost as a result of prior year refinancings and due to the financing of the John Sevier CCF. See Note 8.

## 2012 Compared to 2011

Net interest expense decreased \$32 million for the year ended September 30, 2012. This was primarily the result of a \$45 million increase in the amount of capitalized interest related to allowance for funds used during construction ("AFUDC") as a result of ongoing construction activities at Watts Bar Unit 2. This was partially offset by a \$13 million increase in interest expense primarily due to an increase of \$34 million related to the financing of the John Sevier CCF. See Note 8 and Note 12 — Secured Debt of VIEs.

## 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 any other financing arrangements such as lease financings, call monetization transactions, sales of assets, and sales of receivables and loans. Management expects these sources, certain of which are described below, to provide adequate liquidity to TVA for the foreseeable future.

The TVA Act authorizes TVA to issue Bonds in an amount not to exceed \$30.0 billion outstanding at any time. At September 30, 2013, TVA had \$24.8 billion of Bonds outstanding (not including noncash items of foreign currency exchange loss of \$43 million and net discount on sale of Bonds of \$85 million). Due to this limit on the amount of outstanding Bonds, TVA may



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not be able to use Bonds to finance all of the capital investments planned over the next decade. However, TVA believes that other forms of financing not subject to the limit on Bonds, including lease financings (see Lease Financings below and Note 8), can provide supplementary funding. Also, the impact of energy efficiency and demand response initiatives may reduce generation requirements and thereby reduce capital needs. TVA anticipates that capital spending needs can be met with a combination of Bonds, lease arrangements, energy prepayments, additional power revenues through rate increases, cost reductions, or other ways.

**Issuance of Debt.** TVA Bonds are not obligations of the United States, and the United States does not guarantee the payments of principal or interest on Bonds. Bonds consist of power bonds and discount notes. Power bonds have maturities of between one and 50 years. 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 16 — Appropriation Investment.

The rate test for the one-year period ended September 30, 2013, was calculated after the end of 2013, 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.

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The bondholder protection test for the five-year period ended September 30, 2010, was calculated after the end of 2010, and TVA met the test's requirements. TVA must next meet the bondholder protection test for the five-year period ending September 30, 2015.

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.

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

## Short-Term Borrowing Table

	At September 30 2013	For the year ended September 30 2013	At September 30 2012	For the year ended September 30 2012	At September 30 2011	For the year ended September 30 2011
Amount Outstanding (at End of Period) or Average Amount						
Outstanding (During Period)						
Discount notes	\$2,432	\$1,887	\$1,507	\$1,148	\$482	\$363
Weighted Average Interest Rate						
Discount notes	0.042	% 0.078	% 0.085	% 0.079	% 0.001	% 0.137
Maximum Month-End Amount						
Outstanding (During Period)						
Discount notes	N/A	\$3,261	N/A	\$2,550	N/A	\$1,401

TVA held a higher balance of short-term debt at September 30, 2013, than at September 30, 2012, due to debt portfolio management decisions. The average balance of short-term debt was higher in 2013 than 2012 due to the decision to hold a higher percentage of the debt portfolio in short-term debt to take advantage of historically low short-term rates. TVA held a higher balance of short-term debt at September 30, 2012, than at September 30, 2011, due to the timing of cash flows and debt portfolio management decisions. The average balance of short-term debt was higher in 2012 than 2011 due to heavy refinancing activity throughout the fiscal year and the decision to hold a higher percentage of the debt portfolio in short-term debt to take advantage of historically low short-term rates. 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. In funding such projects, TVA plans to continue to adhere to its financial guiding principles whereby operating costs, debt service, and maintenance of its power system are covered primarily from the sale of electricity, while certain construction projects, including new generation investments, are funded with debt or other forms of financing. Following the principles, any additional financing obligations related to new generation projects, such as Watts Bar Unit 2, are expected to be paid off before the end of the asset's useful life.

During 2013 and 2012, TVA issued \$2.2 billion and \$1.1 billion of power bonds, respectively, and redeemed \$2.4 billion and \$2.7 billion of power bonds, respectively. Power bonds outstanding, excluding unamortized discounts and premiums and net exchange losses from foreign currency transactions, at September 30, 2013 were \$24.8 billion (including current maturities) and at September 30, 2012 were \$24.1 billion (including current maturities). For additional information about TVA debt issuance activity and debt instruments issued and outstanding at September 30, 2013, and 2012, including rates, maturities, outstanding principal amounts, and redemption features, see Note 12 — 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.

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 fiscal year 2014 and has a maturity date of September 30, 2014. Access to this credit facility or other similar financing arrangements with the U.S. Treasury has been available to TVA since the 1960s. TVA plans to use the U.S. Treasury credit facility as a secondary source of liquidity. The interest rate on any borrowing under this facility is based on the average rate on

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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, 2013. The availability of this credit facility may be impacted by how the U.S. government addresses the situation of approaching its debt limit.

The following table provides additional information regarding TVA's funding available in the form of three long-term revolving credit facilities. The credit facilities accommodate the issuance of letters of credit. 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. See Note 12 — Credit Facility Agreements and Note 14 — Other Derivative Instruments — Collateral.

## Summary of Long-Term Credit Facilities

At September 30, 2013

(in billions)

Maturity Date	Facility Limit	Letters of Credit Outstanding	Cash Borrowings	Availability
June 2017	\$1.0	\$0.2	\$—	\$0.8
December 2017	1.0	0.1	—	0.9
April 2018	0.5	0.5	—	—
	\$2.5	\$0.8	\$—	\$1.7

Lease Financings. On August 9, 2013, TVA entered into a \$400 million leasing transaction whereby it agreed to lease for a term of approximately thirty-one years Southaven Combined Cycle Combustion Turbine Facility ("Southaven CCF") to Southaven Combined Cycle Generation, LLC ("SCCG"). The lease was funded through SCCG's issuance of \$360 million of secured notes and \$40 million of membership interests subject to mandatory redemption. On the same date, TVA agreed to lease the facility back from SCCG for a term of twenty years, at the end of which the head lease will terminate so long as TVA is not in default. TVA used the proceeds from the transaction primarily for the re-acquisition of the 90 percent undivided interest in the Southaven CCF held by Seven States Southaven, LLC ("SSSL"), a subsidiary of Seven States Power Corporation ("Seven States"). See Note 13 — Lease/Leasebacks.

On January 17, 2012, TVA entered into a \$1.0 billion leasing transaction whereby it agreed to lease for a term of fifty years John Sevier CCF to John Sevier Combined Cycle Generation LLC ("JSCCG"). The lease was funded through JSCCG's issuance of \$900 million of secured notes and \$100 million of membership interests subject to mandatory redemption. On the same date, TVA agreed to lease the facility back from JSCCG for a term of thirty years, at the end of which the head lease will terminate so long as TVA is not in default. TVA received proceeds of approximately \$970 million in accordance with the terms of the head lease and related construction management agreement. TVA used the proceeds from the transaction to meet its requirements under the TVA Act. JSCCG deposited approximately \$30 million with a lease indenture trustee to fund the first payments due on its secured notes and membership interests in July 2012. The membership interests in JSCCG were funded by John Sevier Holdco LLC ("Holdco") with proceeds from a \$100 million secured notes issuance.

TVA has determined that SCCG, JSCCG and Holdco are variable interest entities of which TVA is the primary beneficiary and, as such, TVA is required to account for the entities on a consolidated basis. See Note 8, Note 10 — Membership Interests of VIE Subject to Mandatory Redemption, and Note 12 — Secured Debt of VIEs.

TVA may seek to enter into similar arrangements for other assets in the future, potentially including assets under construction. While such leasing transactions allow TVA to diversify its asset financing program, financing an asset by using the proceeds of leasing transactions is typically more costly to TVA than financing an asset with the proceeds of Bonds.



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## Summary Cash Flows

A major source of TVA's liquidity is operating cash flows resulting from the generation and sales of electricity. A summary of cash flow components for the years ended September 30 follows:

## Summary Cash Flows

For the years ended September 30

	2013	2012	2011
Cash provided by (used in):			
Operating activities	\$2,597	\$2,574	\$2,437
Investing activities	(2,385	) (2,513	) (3,142
Financing activities	522	300	884
Net change in cash and cash equivalents	\$734	\$361	\$179

## Operating Activities

## 2013 Compared to 2012

Net cash flows provided by operating activities increased by \$23 million in 2013 compared to 2012. This increase is due to the increase in net income, cash savings from the increased use of hydroelectric generation as a result of increases in rainfall and runoff, the use of coal inventories which had been built up during the prior year, and the decrease in TVA's required posting of cash collateral associated with commodity hedges. These increases were partially offset by higher costs accrued in 2012, which were subsequently paid in 2013, compared to the significantly lower costs accrued at September 30, 2013, as a result of TVA's efforts to improve cost management, working capital, and operational performance.

## 2012 Compared to 2011

Net cash flows provided by operating activities increased \$137 million in 2012 compared to 2011. This increase was primarily due to the cost savings initiatives undertaken in the second quarter of 2012, which resulted in decreased contractor and consultant services and reductions in discretionary spending. Additionally, nuclear operations expenditures decreased due to fewer nuclear refueling outages in 2012 as compared to the prior year. No pension contributions were required during 2012 as a result of significant market returns and TVA prefunding its required annual qualified defined benefit pension plan contributions for years 2010 through 2013 with a \$1 billion contribution in 2009. In 2011, TVA made an additional discretionary contribution of \$270 million due, in large part, to poor market returns during that year.

## Investing Activities

## 2013 Compared to 2012

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. Net cash flows used in investing activities decreased \$128 million in 2013 compared to 2012. This change was primarily due to the timing, prioritization, and cancellation of certain capital projects.

## 2012 Compared to 2011

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The majority of TVA's investing cash flows are related to investments in property, plant, and equipment for new generating assets, as well as additions and upgrades to existing facilities including an increase on spending for clean air projects and converting wet coal combustion residual ("CCR") facilities to dry collection facilities.

Net cash flows used in investing activities decreased \$629 million in 2012 compared to 2011. The decrease was due to the August 2011 purchase of a combined cycle plant for \$436 million and a \$298 million decrease in cash spent on major projects due primarily to a delay in the completion of Watts Bar Unit 2 and a deferral of non-critical projects due to the lower planned revenue for 2012.

These changes were offset by a \$145 million increase in Nuclear fuel expenditures for 2012 compared to 2011, due to an increase in the number of future refueling outages for which fuel was purchased.



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## Financing Activities

## 2013 Compared to 2012

Net cash flows provided by financing activities increased \$222 million in 2013 compared to 2012 due to an increase in the net issuances of debt as a result of TVA's election to maintain higher cash balances due to the timing of cash flows and debt portfolio management decisions. See Liquidity and Capital Resources — Sources of Liquidity — Issuance of Debt. The increase of Payments on leases and leasebacks is due to the reacquisition of the Southaven CCF, the financing of which resulted in proceeds from a \$360 million secured notes issuance and the issuance of \$40 million of membership interests. See Note 8 — Southaven.

## 2012 Compared to 2011

Net cash flows provided by financing activities decreased by \$584 million in 2012 compared to 2011 primarily due to an increase in long-term debt redemptions net of long-term debt issuances, partially offset by an increase in short-term debt issuances. The increase in long-term debt redemptions reflects more maturing bonds and an elective redemption (call) of bonds. TVA had decreased short-term debt levels by issuing long-term debt in order to take advantage of declining interest rates, and in anticipation of upcoming maturities of debt. The increase in short-term debt in 2012 was to fund bonds redeemed. The \$1.0 billion long-term debt Issues of variable interest entities occurred in January 2012. See Note 12 — Secured Debt of VIEs.

## Cash Requirements and Contractual Obligations

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

Future Planned Construction Expenditures<sup>(1)</sup>

As of September 30

	Actual	Estimated Construction Expenditures		
	2013	2014	2015	2016
Watts Bar Unit 2	\$564	\$652	\$374	\$99
Other capacity expansion expenditures <sup>(2)</sup>	26	16	40	102
Environmental expenditures	196	448	280	197
Coal combustion residual	75	99	132	113
Transmission expenditures	172	339	405	458
Other capital expenditures <sup>(3),(4)</sup>	873	798	831	823
Total construction expenditures	\$1,906	<sup>(5)</sup> \$2,352	\$2,062	\$1,792

## 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) Does not include the \$1.1 billion estimated cost of the Paradise natural gas-fired plant approved by the TVA Board on November 14, 2013.

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

(4) 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.

(5) The numbers above exclude AFUDC, capitalized during the year, related to construction expenditures, of \$168 million and the change in capital expenditures of \$23 million. Of this amount, \$23 million is reflected on TVA's consolidated balance sheets in a regulatory asset account.

TVA conducts a continuing review of 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 provide a cash return 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, 2013. See Note 8, Note 9, Note 10, Note 12, Note 13, Note 16, and Note 20 for a further description of these obligations and commitments.

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## Commitments and Contingencies

## Payments due in the year ending September 30

	2014	2015	2016	2017	2018	Thereafter	Total
Debt <sup>(1)</sup>	\$2,464	\$1,032	\$32	\$1,555	\$1,682	\$18,056	\$24,821
Interest payments relating to debt	1,200	1,207	1,162	1,148	1,059	18,121	23,897
Debt of VIEs	30	32	33	35	36	1,175	1,341
Interest payments relating to debt of VIEs	62	60	58	58	56	747	1,041
Lease obligations							
Capital	5	5	5	5	5	36	61
Non-cancelable operating	37	30	29	28	27	87	238
Purchase obligations							
Power	219	204	219	231	230	3,336	4,439
Fuel	1,419	1,176	794	442	498	2,002	6,331
Other	255	210	184	182	502	1,221	2,554
Environmental Agreements	73	80	63	41	14	—	271
Membership interests of variable interest entity subject to mandatory redemption		2	2	2	2	30	40
Interest payments related to membership interests of variable interest entity subject to mandatory redemption	3	3	3	2	2	16	29
Nuclear power	11	36	1	—	—	—	48
Litigation settlements	11	2	—	—	—	—	13
Environmental cleanup costs-Kingston ash spill	102	67	—	—	—	—	169
Payments on other financings	100	104	104	104	104	401	917
Payments to U.S. Treasury							
Return of Power Program Appropriation Investment	10	—	—	—	—	—	10
Return on Power Program Appropriation Investment	5	8	8	8	8	93	130
Total	\$6,008	\$4,258	\$2,697	\$3,841	\$4,225	\$45,321	\$66,350

## Note

(1) Does not include noncash items of foreign currency exchange loss of \$43 million and net discount on sale of Bonds of \$85 million.

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

## Energy Prepayment Obligations

## Obligations due in the year ending September 30

	2014	2015	2016	2017	2018	Thereafter	Total
Energy Prepayment Obligations	\$100	\$100	\$100	\$100	\$100	\$10	\$510

EnergyRight® Solutions Program. TVA guarantees repayment on certain loans receivable from customers of TVA's LPCs in association with the EnergyRight® Solutions program. TVA sells the loans receivable to a third-party bank and has agreed with the bank to purchase any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. At September 30, 2013, the carrying amount of the loans receivable, net of discount, was approximately \$150 million. Such amounts are not reflected in the Commitments and Contingencies table above. The carrying amount of the financing obligation was approximately \$186 million.

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Liquidity Challenges Related to Generation Resources

Nuclear Regulatory Commission Safety Improvement Orders and Other Guidance. In March 2012, the NRC issued three new safety orders stemming from lessons learned from the Fukushima events. The orders require (1) the development of strategies for responding to an interruption of off-site power, (2) the addition of more reliable instruments to measure water levels in cooling pools where spent nuclear fuel is stored, and (3) the installation of more robust containment venting systems to prevent containment failure due to overpressurization. The first two orders apply to every nuclear reactor in the U.S., including Watts Bar Unit 2, which will be required to comply prior to issuance of its operating license. The third order applies only to certain U.S. boiling water reactors, including Browns Ferry. These reactors are required to improve their containment venting systems to prevent over-pressurization due to the buildup of non-condensable gases such as hydrogen. TVA's plans to fully implement the requirements of these three orders were submitted to the NRC on February 28, 2013. TVA expects to complete the implementation of these orders by 2019, and the cost to comply with these orders is not expected to exceed \$220 million.

In addition to these orders, the NRC issued requests for information from U.S. nuclear operators regarding earthquake and flood risks and emergency planning. TVA has submitted the required information in accordance with the NRC schedule. Based on the information provided in response to these requests, the NRC will determine if additional regulatory requirements are needed for these subjects. At this time, TVA is not able to predict the final outcome of these potential requirements or the associated costs; however, these amounts could be significant.

Since the Fukushima events, the NRC has also issued and adopted additional detailed guidance on the expected response capability to be developed by each nuclear plant site. TVA has developed plans and schedules for the development and implementation of strategies and physical plant modifications to address the actions outlined in this guidance for all of its plants, including Watts Bar Unit 2. The initial studies, including the required plant walkdowns, are expected to be complete in the first quarter of 2014. Flooding and seismic re-evaluations to determine any further plant modifications are scheduled for completion in mid 2015. In addition to the actions described above, TVA may be required to take further actions to comply with any additional regulatory action that the NRC takes in response to the Fukushima events.

Browns Ferry. In March 2013, TVA submitted a license amendment request to the NRC requesting a change to Browns Ferry's operating license to transition to a risk-based fire protection program as defined under the fire code commonly referred to as the National Fire Protection Association Standard 805. As scoped in the license amendment request, design and modifications will be performed over the next six years. Cost estimates are still being developed and costs are expected to be significant.

Extreme Flooding Preparedness. Updates to the TVA analytical hydrology model have indicated that under "probable maximum flood" conditions, some of TVA's dams would not be high enough to contain the flood waters. A "probable maximum flood" is an extremely unlikely event, and TVA is taking actions with the aim of ensuring that in the case of such an event, flood waters would pass safely and would not cause failure of these dams. TVA implemented interim dam modifications in the first quarter of 2010 by installing engineered, interconnected, fabric-lined containers filled with compacted crushed stone to protect four dams. The permanent solution to a probable maximum flood event is to raise the four dams. Construction is scheduled to begin in the spring of 2014, and TVA has made a commitment to the NRC to complete construction by October 2015.

As discussed above under Nuclear Regulatory Commission Safety Improvement Orders and Other Guidance, the NRC has issued requests for information from U.S. nuclear operators regarding flood risks. In response to this request, TVA is performing additional hydrological analyses. In March 2013, TVA advised the NRC that it will complete these analyses in 2015. The results of these analyses and the NRC's response to the information could identify the

need for additional modifications.

In June 2012, TVA committed to the NRC to make a series of near-term and longer-term improvements to reduce flooding concerns at Watts Bar and Sequoyah (in addition to the permanent dam modifications described above). The near-term improvements involve the construction of flood barriers around specific components and enhancements to systems at the plants. Any specific improvements will be identified after the completion of necessary technical and environmental reviews.

In March 2013, the NRC advised TVA of multiple apparent violations associated with TVA's management of several aspects of the hydrology issues associated with Watts Bar and Sequoyah. These apparent violations were discussed at a regulatory conference with the NRC in April 2013. In June 2013, the NRC issued the final significance determination of these apparent violations. The NRC concluded that there were two violations of low to moderate safety significance and one Severity Level III violation at Sequoyah and one violation of substantial safety significance, one violation of low to moderate safety significance, and one Severity Level III violation at Watts Bar. As a result, TVA will be subject to additional supplemental inspections with respect to these issues.

The total cost of the hydrology improvements described above are being evaluated, and the evaluation should be completed by 2015. The costs associated with these improvements could be significant.

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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 in the range of \$4.0 billion to \$4.5 billion, and TVA plans to bring Unit 2 into commercial operations by December 2015. The unit was approximately 80 percent complete at September 30, 2013.

The NRC agreed in April 2013 with the industry's approach to address seismic issues associated with the Fukushima events, which reduced uncertainty in TVA's implementation of actions to resolve this issue. Progress by the NRC in addressing waste confidence (relating to the potential environmental impacts of storage of spent fuel at each reactor site) also improves the likelihood that this issue will be resolved in a timely fashion. The current construction permit expired in March 2013. An extension to the permit has been requested, and by regulation, work is allowed to proceed. An extended construction permit is expected to be received from the NRC in the first quarter of 2014.

Bellefonte Unit 1. The incorporation of Watts Bar Unit 2 lessons learned into the Bellefonte Unit 1 completion estimate has revealed some similar problems and inaccuracies. TVA finalized a new estimate to complete Bellefonte Unit 1 during the first quarter of 2014 putting the total estimated cost of completion in the range of \$7.5 billion and \$8.7 billion. Work at the site has been slowed to better allocate resources on nearer-term priorities as both budget and staffing levels have been reduced in the 2014 budget. TVA believes that the resulting budgeting and staffing levels should be sufficient to preserve Bellefonte for potential future development. TVA plans to utilize its integrated resource planning process to help determine how Bellefonte best supports TVA's overall efforts to continue to meet customer demand with low-cost, reliable power.

## Off-Balance Sheet Arrangements

At September 30, 2013, TVA had no off-balance sheet arrangements.

## Key Initiatives and Challenges

### Generation Resources

Coal-Fired Units. Due to the age, lower capacity, and lower efficiency of TVA's older coal-fired units, it may not be economical to continue to operate some units in the future, particularly if new environmental laws or regulations become effective. The decision to idle or retire coal-fired units from its generation fleet will be influenced in part by the two environmental agreements reached in April 2011 (the "Environmental Agreements") (see Note 20 — Legal Proceedings — Environmental Agreements) and by the cost of adding emission control equipment to existing units.

Under the Environmental Agreements, TVA committed, among other things, to retire, on a phased schedule, 18 coal-fired units. As of September 30, 2013, TVA had already retired four coal-fired units with a summer net capability of 574 MW, and TVA idled an additional five coal-fired units with a summer net capability of 968 MW on October 1, 2013. See Item 1, Business — Power Supply — Coal-Fired for the schedule of future idling decisions.

In March 2013, TVA announced it is proceeding with a \$1.1 billion emissions control project at Gallatin Fossil Plant. The project includes the dry installation of selective catalytic reduction ("SCR") systems, scrubbers, and baghouses at all four units of the 976 MW plant. The dry scrubbers and associated baghouses are expected to be completed in 2016, and the SCR systems are expected to be completed in 2017. TVA also plans to locate a Particulate Matter Continuous Emissions Monitor ("PM CEM") on the common stack for Shawnee Fossil Plant Units 6-10. TVA had been evaluating a particulate control option for Paradise Fossil Plant ("Paradise") Units 1 and 2 or a gas-fired replacement generation option to meet the requirements of the Mercury and Air Toxics Standard ("MATS"). At its November 14, 2013 meeting, the TVA Board canceled its August 2012 conditional budget authorization for a particulate control project and approved the construction of a natural gas facility at Paradise. Upon completion of the natural gas-fired facility at

the Paradise site, Paradise coal-fired Units 1 and 2 will be retired. Paradise Unit 3, a coal-fired unit, would continue to be operated.

Discontinuing the use of some coal-fired units may be constrained by transmission expansion that will be required before the units are taken out of service. TVA invested \$130 million in transmission upgrades between 2011 and 2013 and estimates future expenditures for transmission upgrades to accommodate inactive coal-fired units to be approximately \$350 million for 2014 to 2020.

Nuclear Generation. In October 2010, while Browns Ferry Unit 1 was shut down for a scheduled refueling outage, TVA discovered a low pressure coolant injection valve had experienced an unanticipated failure. The NRC concluded that the valve failure, and TVA's inability to identify the failure, was an issue of "high safety significance" (which is termed a "red" finding under the NRC's Reactor Oversight Process) and designated Browns Ferry in the "multiple/repetitive degraded cornerstone" category in its performance assessment process. As a result of this designation, Browns Ferry is subject to substantially higher NRC oversight. A series of intensive inspections and assessments began in the fall of 2011. In June 2012, TVA presented its plans to improve Browns Ferry's overall performance and reduce plant risk at a public meeting with the NRC. TVA described its plans to implement corrective actions and monitor the improvement of plant performance to support the NRC's supplemental inspections of Browns Ferry related to the 2011 red finding. TVA noted that while, at that time, much improvement remained to be realized, there were initial indications that improvement was occurring. Subsequently, in February 2013, TVA notified the NRC that



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Browns Ferry was ready for the NRC to conduct the significant inspection associated with the red finding (referred to as a 95003 inspection). The NRC completed this inspection, conducted a public meeting on July 11, 2013, and formally notified TVA of the results by issuing a Confirmatory Action Letter on August 22, 2013. The Confirmatory Action Letter specified 10 actions that must be completed by November 2013 as well as additional longer-term actions that must be completed between May and December of 2014.

On January 7, 2013, TVA submitted the license renewal application to the NRC for Sequoyah Units 1 and 2. If approved, the operating licenses for both units would be extended by an additional 20 years, to 2040 for Unit 1 and 2041 for Unit 2. The NRC's review of the applications may take up to three years. It is possible that the approval of the license renewal applications could be impacted by the NRC's consideration of industry-wide issues, such as revisions to the Waste Confidence Decision, finalization of regulations in response to Fukushima events and other guidance, and the administrative proceeding opposing the renewal of the operating license.

Nuclear power is a core component of TVA's energy portfolio. TVA is addressing the operating issues at Browns Ferry and its other nuclear units and is accelerating required performance improvement at all plants. To this end, the TVA Board has approved the expenditure of up to \$97 million through 2015 to accelerate improvements in Browns Ferry's performance and reliability. Recent inspections by the NRC have acknowledged improvements, but TVA continues to receive additional inspections of its nuclear fleet.

Status of Other Generation Units. TVA had several hydroelectric and combustion turbine units removed from service as of September 30, 2013. All four units at Raccoon Mountain were out of service as of September 30, 2013, because of cracking in the rotor poles and the rotor rims. These units are undergoing a maintenance overhaul and are expected to return to service in 2014. TVA is dispatching generation from other TVA units and purchasing power, if needed, to compensate for the loss in generating capacity.

Effective May 1, 2012, four simple-cycle combustion turbine units at TVA's Allen Fossil Plant ("Allen"), with a total net summer capability of 64 MW, were designated as temporarily unavailable for operation until repairs have been performed.

The units are expected to return to service in 2014.

Capacity Agreement. On December 27, 2012, TVA signed a 10-year conversion services agreement with Calpine Energy Service, L.P. ("Calpine"), that gives TVA exclusive rights to the Decatur Energy Center in Decatur, Alabama, a 720 MW summer capacity, natural gas-fired combined cycle plant. Under this conversion services agreement, TVA will deliver natural gas to the plant, and the plant, which is owned and operated by affiliates of Calpine, will convert the natural gas to electricity and deliver the power to TVA's transmission system. The contract became effective January 1, 2013.

## Cost Reduction Initiatives

TVA is undertaking cost reduction initiatives with the goal of keeping rates low, keeping reliability high, and continuing to fulfill its broader mission of environmental stewardship and economic development. To position itself to achieve this goal, TVA, in conjunction with other actions, completed a high-level realignment of its strategic business units.

During the next phase of its cost reduction initiatives, TVA will focus on reducing operating and maintenance costs through further efficiency gains and streamlining the organization. Business unit leaders will work to identify ways to further streamline their organizations to achieve 2015 operating and maintenance cost reduction targets by eliminating unnecessary work; increasing productivity; minimizing overlaps, redundancies, and handoffs; and ensuring that accountability for compliance rests with its line organizations. Given that approximately 80 percent of TVA's

operating and maintenance costs are related to labor, staffing level reductions will necessarily result from this process. The evaluation of staffing levels will take into account attrition, elimination of open positions, and retirements in order to minimize the impact on current personnel. Certain employees may be eligible for severance payments if impacted by the reorganization, but the amount of such payments is not reasonably estimable at this time as management's evaluation of staffing levels is not yet complete. TVA's goal is to reduce operating and maintenance costs by \$500 million by 2015 as compared to its 2013 budget.

#### Regulatory Compliance

Kingston Fossil Plant. In December 2008, a containment dike surrounding a portion of a landfill for ash from the Kingston Fossil Plant ("Kingston") operations failed releasing approximately 5.4 million cubic yards of coal ash. Approximately 3.0 million cubic yards of ash were recovered from the adjacent Emory River from March 2009 to December 2010 and transported offsite for disposal. TVA finished recovering approximately 2.4 million cubic yards of ash from the adjacent Swan Pond Embayment in June 2013 and is currently placing that ash in an onsite ash landfill. Once the ash is stacked in place, a multi-layer cap will be constructed over the landfill, which is approximately 230 acres. Also, in June 2013, TVA began placing the first section of the multi-layer cap. The final cap is forecasted to be completed by the first quarter of 2015. An underground perimeter slurry wall is also being constructed to stabilize the perimeter of the landfill to contain the ash in the event of an earthquake. The wall construction was completed in August 2013, and jet grout repairs are expected to continue into the third quarter of 2014.

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In accordance with EPA approved plans, the long-term monitoring of the Emory River was initiated in the spring of 2013 and will continue for up to 30 years. Results of this monitoring will be used to evaluate the ecological resources in the river system and the river's natural processes for remediating any residual ash in the river. In addition, TVA is restoring the ecological habitat along the Emory River and in the Swan Pond Embayment. That work is scheduled to begin in 2014, and is expected to be finished by the spring of 2015. A final assessment, issuance of a completion report, and approval by the State of Tennessee and the EPA are expected to occur by the third quarter of 2015. See Note 9 for a discussion of the Kingston ash spill.

In December 2010, a leak was identified in the clay liner of the gypsum pond at Kingston. TVA submitted to the Tennessee Department of Environment and Conservation ("TDEC") a two-phase Corrective Action Plan to install a synthetic liner on the gypsum pond. Work on the first phase of the new gypsum storage facility was completed on October 21, 2011, and TDEC approval to place the facility back in operation was received on November 16, 2011. The plan for the second phase of the work has been incorporated into the overall Kingston CCR storage strategy, with the specific phase two work to be completed by January 2015, as part of the CCR conversion program.

Coal Combustion Residual Facilities. As a result of the December 2008 ash spill at Kingston, TVA retained an independent third-party engineering firm to perform a multi-phased evaluation of the overall stability and safety of all existing embankments associated with TVA's wet CCR facilities. The study showed that none of TVA's other coal-fired plants presented risks similar to the conditions that existed at Kingston at the time of the ash spill, and that the ongoing remediation work being done at the plants should bring all of them within industry standards in terms of stability upon completion. Implementation of recommended actions is ongoing, including risk mitigation steps such as performance monitoring, designing and completing repairs, developing planning documents, obtaining permits, and generally implementing the lessons learned from the Kingston ash spill at TVA's other CCR facilities.

TVA is planning to convert all of its wet fly ash and gypsum facilities to dry storage collection facilities. The expected cost of the CCR work is between \$1.5 billion and \$2.0 billion, and the work is expected to be completed by December 2022. As of September 30, 2013, \$516 million of costs had been incurred since the start of the work.

TVA is studying the adequacy of CCR storage capacity at its coal-fired plants that currently have dry storage collection facilities. If it is determined that the remaining capacity is not adequate, additional storage facilities will need to be permitted and built, or off-site disposal will need to be arranged.

Transmission Issues. Since the announcement of the proposed integration of Entergy Corporation ("Entergy") into the Midcontinent Independent Transmission System Operator, Inc. ("MISO") market, TVA has been evaluating potential impacts to the reliability of its transmission system. TVA completed a detailed reliability assessment during the second quarter of 2013 which identified that significant transmission upgrades will be required if new coordinated planning and operational processes are not implemented.

TVA and neighboring utilities reached a transition agreement with MISO on June 19, 2013, to limit market dispatch flows between its existing region and its new members including Entergy, Louisiana Generating, LLC, South Mississippi Electric Power Association, and others collectively referred to as the MISO South Region. The transition agreement limits power transfers between the regions and requires MISO to respect TVA flowgate limits in real-time. The transition agreement reduces the impact of these transfers on TVA and the other affected parties through April 2015, and the affected parties intend to incorporate the use of tools and processes developed in the transition period into operations agreements thereafter.

On October 17, 2013, the North American Electric Reliability Corporation ("NERC") revisions to the Transmission Planning ("TPL") Reliability Standards were approved by the Federal Energy Regulatory Commission ("FERC"). The revisions increase requirements on contingency planning, constraints on load shedding, and transparency and

interactions with stakeholders. In anticipation of this revision TVA began preliminary work in 2006, and is now evaluating this final version of the TPL, including costs to comply, which will be significant.

**Adjustment to Nuclear Insurance Costs.** The Price-Anderson Act provides a layered framework of protection to compensate for losses arising from a nuclear event in the United States. In addition to requiring all NRC nuclear plant licensees to purchase nuclear liability insurance, the Price-Anderson Act requires licensees to pay a specified total amount per unit for any nuclear event, including events at other licensees' facilities, plus a five percent surcharge. The NRC adjusts this amount every five years to account for inflation. On July 12, 2013, the NRC increased this total amount to \$127 million per unit for each event, effective September 10, 2013. The maximum amount that could be recovered per year per unit is \$19 million. The prior amounts were a total assessment of \$118 million per unit for each event with a maximum annual payment of \$18 million per unit.

#### Dam Safety Assurance Initiatives

TVA has an established dam safety program, which includes procedures based on the Federal Guidelines for Dam Safety. One aspect of the guidelines is that dam structures will be periodically reassessed to assure that TVA's dams meet current design criteria. TVA is currently performing reassessments of its assets. These assessments include material sampling of the dam and foundational structures and detailed engineering analysis. TVA submitted 15 assessments by September 30,

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2013, and three more are expected by December 31, 2013. Assessments for an additional 10 dams have been approved for 2014.

It is expected that projects will be identified during these assessments, and the work will be appropriately prioritized and completed within TVA's capital improvement process. Current dam upgrade projects already underway include raising the dam height at Cherokee, Watts Bar, Tellico, and Fort Loudon Dams to meet current predicted probable maximum flood heights, and installation of post tension anchors at Cherokee and Douglas Dams to improve stability.

### Future Workforce Needs and Development

Although TVA has traditionally experienced low employee turnover, potential future risks exist because of retirements and competition for talent among utility companies. Personnel with nuclear expertise and skills related to construction and installation of new environmental controls are limited. To ensure that TVA can continue to attract and retain a skilled workforce needed to achieve its vision, TVA revised and implemented an agency wide workforce planning program in 2012.

### Other Initiatives

In November 2012, the Department of Energy ("DOE") announced a grant award to Babcock & Wilcox ("B&W"), in conjunction with TVA and Bechtel, for small modular reactor ("SMR") development. TVA and B&W subsequently signed a contract in February 2013 establishing the process toward submittal and the NRC review of a license application. The B&W-designed SMR would have a scalable, modular design allowing utilities to add electrical generation capacity in increments of 360 MW. The proposed site for the reactor is TVA's Clinch River site near the DOE's Oak Ridge, Tennessee reservation. DOE will invest up to half of the total cost for design, certification, and licensing with the project's industry partners (including TVA) matching this investment by at least one-to-one.

TVA has been evaluating SMRs since 2009, but SMRs are still in the early phase of design and licensing. TVA is preparing the license application, including site characterization work, and the application should be submitted to the NRC in 2015. The Clinch River project will be evaluated at certain progress points to permit TVA to determine whether to continue the development of the project.

### Customers/Counterparties Risk

United States Enrichment Corporation. In May 2012, TVA extended its power contract with its largest directly served customer, United States Enrichment Corporation ("USEC"), a subsidiary of USEC, Inc. On May 24, 2013, USEC announced the cessation of enrichment activities at its Paducah, Kentucky site. TVA and USEC subsequently completed agreements to extend power sales to facilitate the cessation of enrichment activities and to support non-enrichment activities at the site at a greatly reduced level. These sales arrangements may continue to be extended. Power sales to USEC represented three percent and five percent of TVA's total operating revenues for the years ended September 30, 2013, and 2012, respectively. See Note 14 — Counterparty Credit Risk.

The TVA-USEC power contract provided TVA with interconnection to critical electrical facilities operated and maintained by USEC, and has been amended so TVA's interconnection rights will continue until USEC's lease terminates and control of the facilities is returned to DOE, presently anticipated to occur around the second quarter of 2014. TVA has initiated discussions with DOE concerning TVA's continued use of the facilities following termination of the USEC lease.

While USEC was TVA's supplier of enrichment services for uranium for fueling TVA's nuclear units, TVA has sufficient nuclear fuel inventory available to mitigate near-term supply risks, and also expects to be able to procure

material at reasonable rates in the market for nuclear fuel.

#### Ratemaking

TVA's rates are below the national average and TVA has established a goal to keep rates low as benchmarked against the nation's 100 largest utilities. TVA understands the importance of competitive rates as a key to its economic development mission of providing low-cost power to the people of the Tennessee Valley. In support of this goal, TVA continues to review and modify its rate structure to meet the needs of its customers.

For LPCs, the default wholesale rate structure is seasonal time-of-use ("TOU"). However, these customers have two additional wholesale options from which to elect: enhanced TOU and enhanced seasonal demand and energy ("SDE"). LPC elections as of October 1, 2013 were as follows: 144 were served under the enhanced TOU structure, five remained served under the default seasonal TOU structure, and six were served under the enhanced SDE structure.

On August 22, 2013, the TVA Board approved a five-year extension of the environmental adjustment, which commenced in 2004 and was set to terminate on September 30, 2013. The extension will continue unless acted upon as part of a rate change. The environmental adjustment, which reflects the need to collect revenue for environmental expenditures to further TVA's environmental performance, as well as comply with new, more stringent air, water, and waste regulations, currently

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recovers approximately \$415 million per year. In addition, the Board approved a non-fuel base rate increase of 2.63 percent on wholesale rates. It is anticipated this will increase base revenues by approximately \$190 million for 2014.

### Pension Fund

As of September 30, 2013, TVA's qualified pension plan had assets of \$7.2 billion compared with liabilities of \$11.5 billion. The potential for the plan's funded status to quickly improve is limited because of the significant amount of benefits paid each year to plan beneficiaries. The plan currently has approximately 36,000 participants, of which approximately 23,000 are retirees or beneficiaries currently receiving benefits. Benefits of approximately \$622 million were paid to participants in 2013.

### Pending Regulation and Legislation

**Environmental.** TVA anticipates that there will continue to be additional, more stringent air, water, and waste regulatory requirements governing the production and transmission of electricity. TVA also expects future regulations will require the reduction of carbon dioxide emission from current levels. The cost of compliance for these measures is unknown but could require significant expenditures. TVA continues to monitor the changes and pursue actions that limit the impacts of these requirements on its operations. See Item 1, Business — Power Supply and — Environmental Matters.

**Health Care.** There is a risk of increased health care costs associated with the Affordable Care Act legislation. During 2013, 2012 and 2011, TVA changed its health care plans to include, among other things, extended coverage for children, removal of pre-existing condition provisions for minors, and expansion of certain preventative care services in order to comply with the act. Although there have been some increase in TVA's health care costs, they have not been material to its operations. TVA plans to continue to monitor the changes required by this legislation and to review its health care plans to comply in a cost-effective manner with Affordable Care Act requirements and provisions that impact TVA's health care plans.

### Inflation

The economy recently experienced a very deep recession which has led to increased unemployment and low industrial capacity utilization. Given the current low levels of capacity utilization and high unemployment, inflationary pressures should remain low. However, a strong, sustained recovery with increasing labor, construction, and commodity costs, as well as high interest rates, could result in higher costs for TVA and pressure to increase power rates.

### Safeguarding Assets

**Physical Security.** Non-Nuclear asset protection at TVA conforms to various federal regulations, industry best practices and Presidential directives. TVA utilizes a variety of technology solutions, 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 Security and Emergency Management collaborates with the security departments at numerous utilities across the nation to determine the most effective protection strategies for non-nuclear assets.

Recent physical attacks at other utilities on transmission facilities across the country have heightened awareness. TVA is working with the Department of Homeland Security ("DHS"), FERC, Edison Electric Institute, Electric Power Research Institute, 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.** Cyber security is a serious and ongoing challenge for the energy sector. TVA faces potential cyber attacks against its generation facilities, the transmission infrastructure used to transmit power, and its information technology systems and network infrastructure, which could negatively impact the ability of TVA to generate, transport, and deliver power, or otherwise operate its facilities in the most efficient manner. If TVA's technology systems were to fail or be breached and were not recovered in a timely manner, TVA might be unable to fulfill critical business functions, and sensitive and other data could be compromised. The theft, damage, or improper disclosure of sensitive electronic data may also subject TVA to penalties and claims from third parties.

TVA operates in a highly regulated environment. TVA's cyber security program aligns or complies with the Federal Information System Management Act, the North American Electric Reliability Corporation Critical Infrastructure Protection requirements, 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 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.



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TVA continued to experience increased cyber activity in 2013. However, 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 — TVA's information technology assets may not operate as planned.

### Interagency Agreement with the Department of Energy

Under the DOE's 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 is participating as a cooperating agency. TVA could make a decision in 2014 on whether to continue to pursue the use of MOX fuel. 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 it must be environmentally and operationally safe; it must be economic 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.

### 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
- Environmental Cleanup Costs — Kingston Ash Spill
- 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

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and assumptions.

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
Regulatory Accounting		
<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 for 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, 2013, TVA had \$9.7 billion of Regulatory assets and \$213 million of Regulatory liabilities.</p>	<p>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>	<p>TVA has not made any material changes in the accounting methodology 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 above cease to be applicable, TVA would be required to write off these costs and recognize them in earnings.</p>

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Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
Environmental Cleanup Costs - Kingston Ash Spill		
<p>Environmental cleanup costs related to the Kingston ash spill are based upon estimates of the incremental direct costs of the remediation effort, including costs of compensation and benefits for those employees who are expected to devote a significant amount of time directly to the remediation effort. Such amounts are included in the estimate when it is probable that a liability has been incurred as of the financial statement date and the amount of loss can be reasonably estimated. When both of those recognition criteria are met and the estimated loss is a range, TVA accrues the amount that appears to be a better estimate than any other estimate within the range, or accrues the minimum amount in the range if no amount within the range is a better estimate than any other amount.</p>	<p>TVA's estimate of environmental cleanup costs related to the Kingston ash spill contains uncertainties because it requires management to estimate the cost required to clean up the site. Costs included in the environmental cleanup estimate for Kingston include ash dredging and processing, ash disposition, infrastructure repair, dredge cell repair, root cause analysis, certain legal and settlement costs, environmental impact studies and remediation, human health assessments, community outreach and support, regulatory oversight, cenosphere recovery, skimmer wall installation, construction of temporary ash storage areas, dike reinforcement, project management, and certain other remediation costs associated with the cleanup.</p>	<p>TVA continues to evaluate the liability associated with environmental cleanup costs.</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 the environmental cleanup costs.</p> <p>If the actual costs materially differ from the estimate, TVA's results of operations, financial condition, and cash flows could be affected materially.</p> <p>A 10 percent change in TVA's estimated liability at September 30, 2013, would have affected the liability by approximately \$110 million.</p>
<p>At September 30, 2013, TVA estimated that these costs will range from \$1.1 billion to \$1.2 billion. TVA has incurred \$956 million of remediation costs through September 30, 2013. TVA deferred the \$1.1 billion cost estimate as a regulatory asset and is amortizing such costs into operating expenses over a 15-year period beginning in 2010 as such amounts are collected rates.</p>	<p>The following categories could have a significant effect on estimates related to the Kingston ash spill remediation costs:</p> <p>Excluded Costs – TVA has not included the following categories of costs because it has determined that these costs are currently either not probable or not reasonably estimable: penalties (other than the penalties set out in the Tennessee Department of Environmental and Conservation ("TDEC") order) or regulatory directives, natural resource damages (other than payments required under a memorandum of agreement with TDEC and the U.S. Fish and Wildlife Service establishing a process and a method for resolving the natural resource damages claim), future</p>	

lawsuits and future claims, long-term environmental impact costs, final long-term disposition of ash processing area, costs associated with new laws and regulations, or costs of remediating any mixed waste discovered during the ash removal process. See Note 9.

Insurance Coverage - 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. TVA has received insurance proceeds of \$92 million. TVA is seeking recovery of certain costs incurred in the clean up project, including the costs of removing ash from property or waters owned by the State of Tennessee, and related expenses. Any amounts received related to insurance settlements are being recorded as reductions to the regulatory asset and will reduce amounts collected in future rates.

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Asset Retirement Obligations

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, leases. Activities involved with retiring these assets could include decontamination and demolition of structures, removal and disposal of wastes, and site reclamation.

Revisions to the amount and timing of certain cash flow estimates of asset retirement obligations ("AROs") may be made based on engineering studies. For nuclear assets, the studies are performed every other year in accordance with the NRC requirements. For non-nuclear obligations, revisions 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 11.

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
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Nuclear Decommissioning

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

The following key assumptions can have a significant effect on estimates related to the nuclear decommissioning costs reported in TVA's nuclear ARO liability:

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

TVA has not made any material changes in the accounting methodology used to record the nuclear ARO liability during the past three years.

A 10 percent change in TVA's ARO for nuclear decommissioning cost at September 30, 2013, would have affected the liability by approximately \$330 million.

using an expected present value technique 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. 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.

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.

TVA maintains a Nuclear Decommissioning Trust ("NDT") to provide funding for the ultimate decommissioning of its nuclear power plants. The trust's funds are invested in securities generally designed to achieve a return in line with overall equity market performance. The assets of the trust may be invested directly in debt and equity securities, private partnership investments, and certain other financial instruments, and indirectly in such investments through commingled funds. The other financial instruments are used across various asset classes to achieve a desired investment structure. The balance in the trust at September 30, 2013, is less than the present value of the estimated future nuclear decommissioning costs under both the NRC methodology and GAAP but more than the level set forth in the assurance plan that TVA submitted to the NRC.

At September 30, 2013, the present value of the estimated future nuclear decommissioning cost recognized in

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. Currently, TVA uses the assumption that decommissioning will occur within the first seven years after plant shut down. While the impact of these assumptions cannot be determined with precision, either assuming license extension or extending the timing of decommissioning can significantly decrease the present value of these obligations.

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 5.15 percent and 5.66 percent to calculate the present value of the weighted estimated cash flows required to satisfy TVA's decommissioning obligation.

Cost Escalation Factors - TVA's decommissioning estimates include an assumption that decommissioning costs will escalate over present cost levels by four percent annually.

the financial statements was \$2.4 billion and was included in AROs and the unamortized regulatory asset related to ARO costs of \$893 million was included in Regulatory assets.

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Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<b>Non-Nuclear Decommissioning</b>		
<p>The present value of the estimated future non-nuclear decommissioning cost was \$1.1 billion at September 30, 2013. 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>TVA has not made any material changes in the accounting methodology used to record the non-nuclear ARO liability during the past three fiscal years.</p>
<p>TVA maintains an asset retirement trust (“ART”) to help fund the ultimate decommissioning of its power assets. The trust’s funds are invested in securities generally designed to achieve a return in line with debt and equity market performance. The assets of the fund may be invested directly in debt and equity securities and indirectly in such financial instruments through commingled funds. 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.</p>	<p>Timing – In projecting non-nuclear decommissioning costs, the date of the asset’s retirement must be estimated. TVA uses a probability-weighted scenario approach based on management assumptions, type of asset, and other factors to estimate the expected retirement time period. In instances where the retirement of a specific asset differs from the anticipated retirement date, the anticipated retirement date of that specific asset is used. Additionally, TVA expects to incur certain ongoing costs subsequent to the initial asset retirement.</p>	<p>TVA does not believe there is a reasonable likelihood that there will be a material change in the estimates or assumptions they use to record the non-nuclear ARO liability.</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 studies generally assume current technology and regulations. With respect to the CCR facilities, TVA assumes that any future closures will require more costly materials and processes than what is legally required at September 30, 2013.</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>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</p>	<p>A 10 percent change in TVA's ARO for non-nuclear decommissioning costs at September 30, 2013, would have affected the liability by approximately \$110 million.</p>

obligation. At September 30, 2013, the discount rates used in the calculations range from 0.21 percent to 5.66 percent.

Cost Escalation Factors – TVA's non-nuclear decommissioning estimates include an assumption that decommissioning costs will escalate over present cost levels at rates between 1.39 percent and 4.00 percent annually.

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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. 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. Changes in the expected return rates are generally based on annual studies performed by third party professional investment consultants. Based on the results from annual studies for 2013, 2012, and 2011, TVA adjusted the expected return on plan assets rate used to develop the net pension benefit cost for 2013, 2012, and 2011 to 7.25 percent, 7.25 percent, and 7.50 percent, respectively. 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. In September 2013, the TVARS Board approved a new initial asset allocation policy that includes additional asset</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>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 benefit obligation or the market-related value of plan assets in accordance with current accounting methodologies.</p> <p>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</p>

class diversification and maintains the long-term expected return of 7.25 percent.

#### Compensation

Increases. Assumptions related to compensation increases are based on the results obtained from an actual TVA 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 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 increases used to determine benefit obligations for 2013 and 2012 were 5.72 percent and 4.44 percent, respectively. The average assumed compensation increases used to determine net periodic pension cost for 2013, 2012, and 2011 were 4.44 percent, 4.43 percent, and 4.41 percent, respectively.

benefits on an as-paid basis. These changes in the expected rate of return on pension plan assets also do not impact the SERP as any assets set aside for that plan are not considered plan assets under accounting principles generally accepted in the United States of America ("GAAP").

A 0.25 percent increase in the assumption for compensation increases would increase the 2013 projected pension benefit obligation and the 2013 net periodic pension cost by \$16 million and \$3 million, respectively. The actuarial gain related to the difference between expected and actual return on pension plan assets for 2013 and 2012 was \$358 million and \$616 million, respectively. Compared with the assumed return of 7.25 percent, the 2013 and 2012 actuarial gains are due to the actual rates of return on the fair value of assets of 11.7 percent 16.81 percent, respectively. The differences between expected and actual returns that result in an actuarial gain are recognized as a decrease in the related regulatory asset and the pension benefit obligation. A 0.25 percent decrease in the expected rate of return on plan assets would increase the 2013 net periodic pension cost by \$15 million.

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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 5.00 percent and 5.05 percent, respectively, at September 30, 2013. At September 30, 2012, the discount rates used to determine the pension and other post-retirement benefit obligations were 4.00 percent for both the pension and post-retirement obligations. 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 5.00 percent and 5.05 percent to estimate its 2014 pension and other post-retirement net periodic benefit costs, respectively. Changes in the discount rate for 2013 were due to increased long-term interest rates. The discount rate is somewhat volatile because it is determined based upon the prevailing rate as of the measurement date.</p>	<p>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 2013 net periodic pension cost by \$20 million and the 2013 pension projected benefit obligation by \$335 million.</p>

Mortality. Mortality assumptions are based on the results obtained from a recent actual company experience study performed, which included retirees as well as other plan participants. TVA obtained an updated study in 2013, which indicated an improvement in TVA's mortality experience. Accordingly, TVA adjusted the projection period for the RP- 2000 Mortality Tables for males and females projected to 2022 using scale AA at September 30, 2013. At September 30, 2012 and 2011, the projection period for the RP- 2000 Mortality Tables for males and females was projected to 2013 using scale AA.

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 2013 and 2012 were 8.00 percent and 8.50 percent, respectively. The 2013 health care cost trend rate of 8.00 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 8.5 percent for 2013 and 8.00 percent for 2012 and 2011. TVA plans to use 8.0 percent in the determination of 2014 net periodic post-retirement cost.

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 \$8 million and the accumulated post-retirement benefit obligation by \$87 million. Likewise, a one percent decrease in the health care cost trend rate would impact the postretirement service and interest cost components by \$(8) million and the accumulated post-retirement benefit obligation by \$(89) million.

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Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p> <b>Cost of Living Adjustment.</b> 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 is one percent and the maximum is five percent. The COLA was temporarily reduced for a four-year period beginning January 1, 2010, for current retirees, and the eligibility for the COLA was changed to age 60 from attained age 55 for employees retiring on or after January 1, 2010. The COLA assumption has been 2.5 percent since 2009; however, due to the Federal Reserve System's long-term monetary policy and the market-based expectations that inflation will remain below two percent into 2015, TVA adjusted the COLA assumption at September 30, 2013 to 1.6 percent with an assumed gradual increase each successive year until it reaches 2.5 percent in 2019.         </p> <p> <b>Contributions.</b> In 2013, TVA made contributions of \$6 million to the SERP and \$47 million to the other post-retirement benefit plans. TVA expects to contribute \$6 million to the SERP and \$40 million to the other post-retirement benefit plans in 2014. In 2009, TVA entered into an agreement with TVARS resulting in         </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 2013 pension benefit obligation by \$226 million.         </p>

TVA contributing \$1.0 billion for 2010 and as an advance on contributions for 2011 through 2013. In 2011, TVA made an additional discretionary contribution of \$270 million to TVARS. In 2013 and 2012, the qualified defined pension plan's assets exceeded market return expectations and no discretionary contributions were made. TVA expects to contribute \$250 million to TVARS in 2014.



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### Fair Value Measurements

#### Investments

Investments classified as trading consist of amounts held in the NDT, ART, and SERP. 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 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 Level 3 valuations. See Note 15 — Valuation Techniques for a discussion of valuation levels of the investments. See Note 19 — 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 monthly basis to confirm accuracy of the values received from the investment portfolio trustee.

#### Derivatives

TVA has entered into various derivative transactions, principally 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 interest rate swaps are a result of the exercise of counterparty rights associated with TVA's previous swaption transactions. The swaptions were used to protect against declines in value of embedded call provisions on certain Bond issues. 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. Prior to its conversion to an interest rate swap in April 2012, TVA had a swaption that was classified as a Level 3 valuation. The swaption was valued based on an income approach. The valuation was computed using a broker-provided pricing model utilizing interest and volatility rates. The application of credit valuation adjustments ("CVAs") did not materially affect the fair value of these assets and liabilities at September 30, 2013.

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, 2013.

Commodity Derivatives under the Financial Trading Program ("FTP"). TVA has a FTP under which it may 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. These contracts 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, 2013.

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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.

### 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 ("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 2011) 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, 2013, the aggregate counterparty credit risk adjustments applied to TVA's derivative asset and liability positions were decreases of \$6 million and \$1 million, respectively.

**Collateral.** TVA's currency and interest rate swaps 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 14 — 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 became effective for TVA during the presented periods.

#### Legislative and Regulatory Matters

In December 2010, Congress passed the Continuing Appropriations and Surface Transportation Extensions Act, 2011, which included a two-year freeze on statutory pay adjustments for all executive branch pay schedules and a two-year freeze by executive agencies on base salary increases to all senior executives. On March 26, 2013, legislation that extends the federal pay freeze through December 31, 2013 became law. TVA officers continue to be subject to this freeze, and TVA will continue compliance with the freeze for managers, specialists, and non-represented employees for the remainder of CY 2013. The federal salary freeze does not apply to TVA's represented employees, whose salary increases are governed by the terms of collective bargaining agreements, certain promotions and changes in positions, and other forms of non-salary compensation such as lump-sum and incentive-based awards.

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On April 10, 2013, the Fiscal Year 2014 Budget of the U.S. Government (the "Budget") was submitted to Congress. The Budget contains the following language regarding the TVA:

In order to meet its future capacity needs, fulfill its environmental responsibilities, and modernize its aging generation system, TVA's current capital investment plan includes more than \$24.6 billion of expenditures over the next 10 years. However, TVA's anticipated capital needs are likely to quickly exceed the agency's \$30.0 billion statutory cap on indebtedness. Reducing or eliminating the Federal Government's role in programs such as TVA, which have achieved their original objectives and no longer require Federal participation, can help put the Nation on a sustainable fiscal path. Given TVA's debt constraints and the impact to the Federal deficit of its increasing capital expenditures, the Administration intends to undertake a strategic review of options for addressing TVA's financial situation, including the possible divestiture of TVA, in part or as a whole.

Subsequent to April 10, 2013, TVA has been working with the Office of Management and Budget and other Administration officials to provide the information they have requested as part of the Administration's strategic review.

A bill has been introduced in Congress, through which Congress would approve TVA's transfer, on behalf of the United States, of the Yellow Creek Port properties to Mississippi. The property was acquired to be part of a river terminal, a railroad, and industrial sites on the Pickwick Reservoir in Tishomingo County, Mississippi. The transfer would be made under section

4(k)(b) of the TVA Act that allows TVA to dispose of land for the purpose of erecting docks and buildings for shipping purposes or the manufacture or storage of products for the purpose of trading or shipping. Transfers under this section of the TVA Act require congressional approval.

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.

### 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 \$302 million with respect to Legal Proceedings at September 30, 2013. 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 20 — 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, 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. See Note 14.

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### 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"). The RMSC is responsible for (1) reviewing risk management policies to ensure their consistency with TVA's Enterprise Risk Management ("ERM") policies and guidelines, (2) reviewing Strategic Business Unit risks and emerging issues, (3) providing executive guidance and support in enterprise risk assessments and risk management plans, (4) presenting enterprise risks for consideration by the ERC, (5) recommending general risk management processes and methodologies for the enterprise, and (6) sponsoring special projects related to cross-functional risk management activities.

TVA has a designated ERM organization within its Financial Services organization responsible for (1) coordinating risk assessment efforts at TVA organizations, (2) facilitating enterprise risk discussions with the risk subject matter experts across the organization and at the RMSC, ERC, and TVA Board levels, and (3) 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 coal, uranium, natural gas, fuel oil, crude oil, construction materials, reagents, emission allowances, and electricity. TVA's commodity price risk is substantially mitigated by its cost-based rates, including its total fuel cost adjustment. To manage cost volatility for its wholesale and directly served customers, TVA has established a FTP. Under the FTP, TVA currently hedges the risks associated with the price of natural gas, fuel oil, and crude oil. TVA is prohibited from taking speculative positions in its FTP.

Following is a discussion of the impact on the value of TVA's natural gas, fuel oil, and crude oil derivative positions in its FTP that would result from hypothetical changes in commodity prices:

**Natural Gas.** A hypothetical 10 percent decline in the market price of natural gas on September 30, 2013, and 2012, would have resulted in decreases of approximately \$60 million and \$119 million, respectively, in the fair value of TVA's natural gas trading derivative instruments at these dates.

**Fuel Oil.** A hypothetical 10 percent decline in the market price of fuel oil on September 30, 2013, and 2012, would have resulted in decreases of approximately \$4 million and \$3 million, respectively, in the fair value of TVA's fuel oil derivative instruments at these dates.

**Crude Oil.** A hypothetical 10 percent decline in the market price of crude oil on September 30, 2013, and 2012, would have resulted in decreases of approximately \$8 million and \$11 million, respectively, in the fair value of TVA's crude oil derivative instruments at these dates.

### Investment Price Risk

TVA's investment price risk relates primarily to investments in TVA's NDT, ART, pension fund, and SERP.

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, 2013, and 2012, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$132 million and \$117 million, respectively. See Critical Accounting Policies and Estimates — Asset Retirement Obligations — Nuclear Decommissioning for more information regarding TVA's NDT.

Asset Retirement Trust. The ART is presently invested to achieve a return in line with equity and fixed-income market performance. The assets of the trust are invested in securities directly and indirectly through commingled funds. At



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September 30, 2013, and 2012, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$34 million and \$26 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. In September 2013, the TVARS Board approved a new initial asset allocation policy. The approved investment allocation policy 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, global TIPS, 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, 2013, and 2012, 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 \$722 million and \$703 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 investment market performance. At September 30, 2013, and 2012, an immediate 10 percent decrease in the value of the SERP investments would have reduced the value by \$4 million.

## 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.

**Short-Term Investments.** At September 30, 2013, TVA had \$1.6 billion of cash and cash equivalents, and the average balance of cash and cash equivalents for 2013 was \$1.0 billion. The average interest rate that TVA received on its short-term investments during 2013 was less than one percent. If the rates of interest that TVA received on its short-term investments during 2013 were zero percent, TVA would have received \$1 million less in interest from its short-term investments during 2013. At September 30, 2012, TVA had \$868 million of cash and cash equivalents, and the average balance of cash and cash equivalents for 2012 was \$593 million. The average interest rate that TVA received on its short-term investments during 2012 was less than one percent. If the rates that TVA received on its short-term investments during 2012 were zero percent, TVA would have received \$1 million less in interest on short-term investments during 2012. 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.

**Short-Term Debt.** At September 30, 2013, TVA's short-term borrowings were \$2.4 billion, and the current maturities of long-term debt were \$62 million. Based on TVA's interest rate exposure at September 30, 2013, an immediate one percentage point increase in interest rates would have resulted in an increase of \$25 million in TVA's short-term interest expense. At September 30, 2012, TVA's short-term borrowings were \$1.5 billion, and the current maturities of long-term debt were \$2.3 billion. Based on TVA's interest rate exposure at September 30, 2012, an immediate one percentage point increase in interest rates would have resulted in an increase of \$38 million in TVA's short-term

interest expense.

**Long-Term Debt.** At September 30, 2013, and 2012, 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, 2013, and 2012, the average life of TVA's debt portfolio was 17.8 years and 17.0 years, respectively. A schedule of TVA's debt maturities is contained in Note 12 — 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, 2013 and September 30, 2012. 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, 2013, an immediate one-half percentage point decrease in interest rates would have increased the interest rate swap liabilities by \$220 million. Based on TVA's interest rate exposure at September 30, 2012, an immediate one-half percentage point decrease in interest rates would have increased the interest rate swap liabilities by \$295 million.

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## Currency Exchange Rate Risk

At September 30, 2013, and 2012, 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, 2013, and 2012, 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.

## 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. As previously mentioned in Item 1, Business — Customers — Other Customers, power sales to USEC represented three percent of TVA's total operating revenues in 2013. TVA has determined that this customer has the equivalent of a non-investment grade credit rating. As a result of its credit ratings, this customer has provided credit assurance to TVA under the terms of its power contract. On May 24, 2013, the customer announced the cessation of enrichment activities at one of its sites. TVA and the customer subsequently completed agreements to extend power sales to facilitate the cessation of enrichment activities and to support non-enrichment activities at the site at a greatly reduced level. These sales may continue to be extended.

TVA had concentrations of accounts receivable from three customers that represented 27 percent and 26 percent of total accounts receivable at September 30, 2013 and 2012, respectively.

The table below summarizes TVA's customer credit risk from trade accounts receivable at September 30, 2013 and 2012:

## Customer Credit Risk

At September 30

	2013	2012
Trade accounts receivable *		
Investment grade		
Local power companies	\$756	\$871
Exchange power arrangements	2	3
Industries and federal agencies directly served	51	44
Internally rated - investment grade		
Local power companies	661	636
Exchange power arrangements	3	1
Industries and federal agencies directly served	8	11
Non-investment grade		
Industries and federal agencies directly served	3	5

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Internally rated - non-investment grade		
Exchange power arrangements	3	3
Industries and federal agencies directly served	8	11
Total trade accounts receivable	1,495	1,585
Other accounts receivable		
Miscellaneous accounts	73	88
Provision for uncollectible accounts	(1	) (7
Total other accounts receivable	72	81
Accounts receivable, net	\$1,567	\$1,666

Note

\* Includes unbilled power receivables of \$15 million and \$13 million at September 30, 2013 and September 30, 2012, respectively.

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**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.

### 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.

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## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

TENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended September 30

(in millions)

	2013	2012	2011
Operating revenues			
Electricity sales	\$10,829	\$11,086	\$11,723
Other revenue	127	134	118
Total operating revenues	10,956	11,220	11,841
Operating expenses			
Fuel	2,820	2,680	2,926
Purchased power	1,027	1,189	1,427
Operating and maintenance	3,428	3,510	3,617
Depreciation and amortization	1,680	1,919	1,772
Tax equivalents	548	622	662
Total operating expenses	9,503	9,920	10,404
Operating income	1,453	1,300	1,437
Other income (expense), net	44	33	30
Interest expense			
Interest expense	1,394	1,444	1,431
Allowance for funds used during construction and nuclear fuel expenditures	(168	) (171	) (126
Net interest expense	1,226	1,273	1,305
Net income (loss)	\$271	\$60	\$162

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)

	2013	2012	2011
Net income (loss)	\$271	\$60	\$162
Other comprehensive income (loss)			
Net unrealized gain (loss) on cash flow hedges	78	99	(50
Reclassification to earnings from cash flow hedges	(1	) (35	) 7
Total other comprehensive income (loss)	\$77	\$64	\$(43
Total comprehensive income (loss)	\$348	\$124	\$119

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

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CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## ASSETS

	2013	2012
Current assets		
Cash and cash equivalents	\$1,602	\$868
Restricted cash and investments	33	11
Accounts receivable, net	1,567	1,666
Inventories, net	1,091	1,097
Regulatory assets	561	774
Other current assets	52	90
Total current assets	4,906	4,506
Property, plant, and equipment		
Completed plant	47,073	45,917
Less accumulated depreciation	(23,157	) (22,169
Net completed plant	23,916	23,748
Construction in progress	4,704	4,768
Nuclear fuel	1,256	1,176
Capital leases	47	35
Total property, plant, and equipment, net	29,923	29,727
Investment funds	1,701	1,465
Regulatory and other long-term assets		
Regulatory assets	9,131	11,127
Other long-term assets	445	509
Total regulatory and other long-term assets	9,576	11,636
Total assets	\$46,106	\$47,334

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



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CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## LIABILITIES AND PROPRIETARY CAPITAL

	2013	2012
Current liabilities		
Accounts payable and accrued liabilities	\$1,627	\$1,922
Environmental cleanup costs - Kingston ash spill	102	126
Accrued interest	378	376
Current portion of leaseback obligations	69	443
Current portion of energy prepayment obligations	100	102
Regulatory liabilities	212	191
Short-term debt, net	2,432	1,507
Current maturities of power bonds	32	2,308
Current maturities of long-term debt of variable interest entities	30	13
Total current liabilities	4,982	6,988
Other liabilities		
Post-retirement and post-employment benefit obligations	5,348	6,279
Asset retirement obligations	3,472	3,289
Other long-term liabilities	1,861	2,680
Leaseback obligations	692	760
Energy prepayment obligations	410	510
Environmental cleanup costs - Kingston ash spill	67	143
Regulatory liabilities	1	109
Total other liabilities	11,851	13,770
Long-term debt, net		
Long-term power bonds, net	22,315	20,269
Long-term debt of variable interest entities	1,311	981
Total long-term debt, net	23,626	21,250
Total liabilities	40,459	42,008
Commitments and contingencies (Note 20)		
Proprietary capital		
Power program appropriation investment	268	288
Power program retained earnings	4,767	4,492
Total power program proprietary capital	5,035	4,780
Nonpower programs appropriation investment, net	609	620
Accumulated other comprehensive income (loss)	3	(74)
Total proprietary capital	5,647	5,326
Total liabilities and proprietary capital	\$46,106	\$47,334

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



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CONSOLIDATED STATEMENTS OF CASH FLOWSFor the years ended September 30  
(in millions)

	2013	2012	2011
Cash flows from operating activities			
Net income (loss)	\$271	\$60	\$162
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)	1,723	1,947	1,792
Amortization of nuclear fuel cost	268	264	225
Non-cash retirement benefit expense	622	607	465
Prepayment credits applied to revenue	(102)	) (105)	) (105)
Fuel cost adjustment deferral	97	(61)	) 69
Fuel cost tax equivalents	2	47	135
Environmental cleanup costs – Kingston ash spill – non cash	72	73	76
Changes in current assets and liabilities			
Accounts receivable, net	114	89	(62)
Inventories and other, net	27	(131)	) (71)
Accounts payable and accrued liabilities	(296)	) 60	60
Accrued interest	1	(26)	) (4)
Regulatory assets costs	(21)	) (14)	) (21)
Pension contributions	(6)	) (8)	) (274)
Environmental cleanup costs – Kingston ash spill, net	(52)	) (103)	) (108)
Other, net	(123)	) (125)	) 98
Net cash provided by operating activities	2,597	2,574	2,437
Cash flows from investing activities			
Construction expenditures	(2,051)	) (2,119)	) (2,417)
Combustion turbine asset acquisition	—	—	(436)
Nuclear fuel expenditures	(287)	) (361)	) (216)
Change in restricted cash and investments	—	—	(11)
Purchases of investments, net	(48)	) (48)	) (56)
Loans and other receivables			
Advances	(6)	) (2)	) (21)
Repayments	9	10	11
Other, net	(2)	) 7	4
Net cash used in investing activities	(2,385)	) (2,513)	) (3,142)
Cash flows from financing activities			
Long-term debt			
Issues of power bonds	2,122	1,126	1,587
Issues of variable interest entities	360	1,000	—
Redemptions and repurchases of power bonds	(2,358)	) (2,717)	) (1,021)
Payments on debt of variable interest entities	(13)	) (6)	) —
Short-term debt issues (redemptions), net	924	1,024	455
Payments on leases and leasebacks	(446)	) (84)	) (118)
Proceeds from call monetization	—	60	—
Financing costs, net	(20)	) (75)	) (8)
Payments to U.S. Treasury	(27)	) (27)	) (27)

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Other, net	(20	) (1	) 16
Net cash provided by financing activities	522	300	884
Net change in cash and cash equivalents	734	361	179
Cash and cash equivalents at beginning of year	868	507	328
Cash and cash equivalents at end of year	\$1,602	\$868	\$507

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

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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)Net Gains (Losses) on Cash Flow Hedges	Total
Balance at September 30, 2010	\$328	\$4,264	\$640	\$(95	) \$5,137
Net income (loss)	—	172	(10	) —	162
Total other comprehensive income (loss)	—	—	—	(43	) (43
Return on power program appropriation investment	—	(7	) —	—	(7
Return of power program appropriation investment	(20	) —	—	—	(20
Balance at September 30, 2011	\$308	\$4,429	\$630	\$(138	) \$5,229
Net income (loss)	—	70	(10	) —	60
Total other comprehensive income (loss)	—	—	—	64	64
Return on power program appropriation investment	—	(7	) —	—	(7
Return of power program appropriation investment	(20	) —	—	—	(20
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

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

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(Dollars in millions except where noted)

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## 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.

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 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"). 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 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

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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 ("TVA Board") as authorized by the Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (as amended, 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.

### Fiscal Year

TVA's fiscal year ends September 30. Years (2013, 2012, 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. In view of demand for electricity and the level of competition, 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. Most 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 variable interest entities of which TVA is determined to be the primary beneficiary. See Note 8. 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 reclassifications have been made to the 2012 and 2011 Statements of Cash Flows in the Cash flows from operating activities section as \$(14) million and \$(21) million previously reported as Other, net for the years ended September 30, 2012 and 2011, respectively, were reclassified as Regulatory assets and \$42 million for the year ended September 30, 2011, previously reported as Nuclear refueling outage amortization cost was reclassified as Other, net. Additionally, a reclassification has been made to the 2011 Statement of Cash Flows in the Cash flows from financing activities section as \$5 million previously reported as Proceeds from leasebacks was reclassified as Other, net.

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### 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 reflects 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 and \$7 million at September 30, 2013, and 2012, respectively, for accounts receivable. Additionally, loans receivable of \$73 million and \$76 million at September 30, 2013, and 2012, respectively, are included in Other long-term assets and reported net of allowances for uncollectible accounts of \$10 million and \$12 million at September 30, 2013, and 2012, 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 TVA 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

Certain Fuel, Materials, and Supplies. Coal, oil, limestone, tire-based fuel inventories, and 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. Natural gas inventories are valued using an average cost method, and a new average cost is computed monthly.

**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.

#### Property, Plant, and Equipment, and Depreciation

**Property, Plant, and Equipment.** Additions to plant are recorded at cost, which includes direct and indirect costs and an allowance for funds used during construction ("AFUDC"). 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

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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, less salvage value, is charged to accumulated depreciation. Except as described below, 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, 2013, 2012, and 2011 was \$1.4 billion, \$1.7 billion, and \$1.4 billion, respectively. Depreciation expense expressed as a percentage of the average annual depreciable completed plant was 3.12 percent for 2013, 3.78 percent for 2012, and 3.21 percent for 2011. Average depreciation rates by asset class are as follows:

## Property, Plant, and Equipment Depreciation Rates

At September 30

(percent)

	2013	2012	2011
Asset Class			
Nuclear	2.86	2.71	2.58
Coal-Fired	3.47	5.65	3.80
Hydroelectric	1.30	1.35	1.43
Gas and oil-fired	3.21	3.67	3.70
Transmission	2.76	2.99	3.39
Other	8.14	8.10	7.39

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 20 — 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 5 at Widows Creek Fossil Plant ("Widows Creek") were retired on July 31, 2013. In addition on December 31, 2012, John Sevier Units 3 and 4 were idled, and on October 1, 2013, Colbert Fossil Plant ("Colbert") Unit 5 and Johnsonville Fossil Plant ("Johnsonville") Units 5, 6, 9, and 10 were idled.

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 \$49 million and \$308 million in accelerated depreciation expense related to the units during the years ended September 30, 2013, and 2012, respectively.

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.

Capital Lease Agreements. Property, plant, and equipment also includes assets recorded under capital lease agreements. These primarily consist of power production facilities, water treatment assets, and land of \$42 million and power production facilities of \$24 million at September 30, 2013 and 2012, respectively, and fuel fabrication and blending facilities of \$5 million and \$11 million at September 30, 2013 and 2012, respectively.

Allowance for Funds Used During Construction. AFUDC capitalized during the year ended September 30, 2013, was \$168 million, of which \$23 million is reflected in the consolidated balance sheets as a regulatory asset, as compared to

\$171 million capitalized during the year ended September 30, 2012. TVA capitalizes interest as AFUDC, based on the average interest rate of TVA's outstanding debt. The allowance is applicable to construction in progress related to 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 2012 and 2011, TVA also included certain nuclear fuel inventories in the calculation of the allowance. During 2012, the TVA Board approved a change in the AFUDC methodology which removed the inclusion of nuclear fuel from the AFUDC calculation effective October 1, 2012. The accumulated balance of costs, which is used to calculate AFUDC, averaged approximately \$3.1 billion for the year ended September 30, 2013. Subsequent to August 31, 2013, the accumulated balance of costs for Bellefonte Nuclear Plant ("Bellefonte") were 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, 2013 and 2012, unamortized computer software costs totaled \$5 million and \$26 million, respectively. Amortization expense related to capitalized computer software costs was \$31 million for each of 2013, 2012, and 2011. Software costs that do not meet capitalization criteria are expensed as incurred.

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**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.

### 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 reclamation. 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 7 — Nuclear Decommissioning Costs and Non-Nuclear Decommissioning Costs.

### Blended Low-Enriched Uranium Program

Under the blended low-enriched uranium ("BLEU") program, TVA, the 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. This blended nuclear fuel was first loaded in a Browns Ferry Nuclear Plant ("Browns Ferry") reactor in 2005 and is expected to continue to be used to reload the Browns Ferry reactors through at least 2016. BLEU fuel was loaded into Sequoyah Nuclear Plant ("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 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 \$175 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. During 2009, the DOE and TVA agreed that this obligation will be offset by amounts that the DOE expects to owe TVA in the future for certain decommissioning costs that TVA will pay on the DOE's behalf. Accordingly, TVA will remit the BLEU fuel savings amounts to the DOE, only after those future decommissioning costs have been offset against TVA's obligation to the DOE. At September 30, 2013, TVA had paid out approximately \$106 million for this program and the obligation recorded was \$6 million.

The third-party fuel processors own the conversion and processing facilities and will retain title to all land, property, plant, and equipment used in the BLEU fuel program. However, the fuel fabrication contract qualifies as a capital lease, and TVA has recognized a capital lease asset and corresponding lease obligation related to amounts paid or

payable to the processor.

#### Investment Funds

Investment funds consist primarily of trust funds designated to fund nuclear decommissioning requirements (see Note 20 — Contingencies — Decommissioning Costs), non-nuclear AROs (see Note 7 — Non-Nuclear Decommissioning Costs), and the Supplemental Executive Retirement Plan ("SERP") (see Note 19 — Overview of Plans and Benefits — Supplemental Executive Retirement Plan). Nuclear decommissioning funds and SERP funds are invested in portfolios of securities generally designed to achieve a return in line with overall equity market performance, while asset retirement funds are invested in portfolios of securities generally designed to achieve a return in line with overall equity and debt market performance. The nuclear decommissioning funds, asset retirement funds, and SERP funds are all classified as trading.

#### Energy Prepayment Obligations and Discounts on Sales

During 2002, TVA introduced an energy prepayment program, the discounted energy units ("DEU") program. Under this program, TVA LPCs could purchase DEUs generally in \$1 million increments, and each DEU entitles the purchaser to a \$.025/kilowatt-hour discount on a specified quantity of firm power over a period of years (5, 10, 15, or 20) for each kilowatt-hour in the prepaid block. The remainder of the price of the kilowatt-hours delivered to the LPC is due upon billing. TVA's DEU program allowed LPCs to use cash on hand to prepay TVA for some of their power needs, providing funding to TVA and a savings to LPCs in the form of a discount on future purchases. The LPC receives a discount on a specified volume of firm

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energy purchased. The supplement to the power contract specifies the discount rate (2.5 cents per kilowatt-hour), the monthly block of kilowatt-hours to which the discount applies, the number of years (term), and contingencies upon contract termination.

TVA has not offered the DEU program since the end of 2004. Total sales for the program since inception have been approximately \$55 million. TVA is accounting for the prepayment proceeds as unearned revenue and is reporting the obligations to deliver power as Energy prepayment obligations and Current portion of energy prepayment obligations on the September 30, 2013 and 2012 Consolidated Balance Sheets.

TVA recognizes revenue as electricity is delivered to LPCs, based on the ratio of units of kilowatt-hours delivered to total units of kilowatt-hours under contract. At September 30, 2013, approximately \$54 million had been applied against power billings on a cumulative basis during the life of the program, of which approximately \$2 million was recognized as noncash revenue during 2013. Approximately \$5 million was applied against power billings during each of 2012 and 2011.

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, 2013 and 2012 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, 2013, \$990 million 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 2013, 2012, and 2011.

Discounts, which are recorded as a reduction to electricity sales, for both programs amounted to \$47 million for each of the years ended September 30, 2013, 2012, and 2011.

## 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.

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.

TVA purchases nuclear liability insurance, nuclear property, decommissioning, and decontamination insurance, and nuclear accidental outage insurance. See Note 20 — Contingencies — Nuclear Insurance.

TVA purchases excess liability insurance for aviation, auto, marine, and general liability exposures. TVA purchases property insurance for certain conventional (non-nuclear) assets.

The insurance policies are subject to the terms and conditions of the specific policy. Each of the insurance policies purchased contains deductibles or self-insured retentions. TVA recovers the costs of losses through power rates.



In May 2013, TVA discontinued its directors and officers insurance program after determining that TVA's internal indemnification policies and procedures provided sufficient protection to TVA's directors and officers.

#### Research and Development Costs

Research and development costs are expensed when incurred. TVA's research programs include those related to transmission 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 then adds 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.

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### 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.

Prior to 2010, TVA deferred nuclear outage costs that were incurred during the operating cycle subsequent to the refueling outage. These costs are incurred in the process of performing a nuclear fuel reload outage, and the benefits of these costs are realized during the subsequent 18 to 24 months when the nuclear fuel is burned during its operating cycle in producing electricity. The TVA Board historically included in rates the amortization of these deferred nuclear outage costs during the operating cycle subsequent to the refueling outage.

Beginning in 2010, TVA implemented a new policy to expense any future outage costs as incurred consistent with a rate-making change approved by the TVA Board. However, TVA continued to amortize the related existing regulatory asset and included such amounts in rates. These amounts became fully amortized in 2011.

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

In June 2011, the Financial Accounting Standards Board ("FASB") issued guidance that requires adjustments to the presentation of TVA's financial information. The guidance eliminated the option to report comprehensive income and its components in the statement of changes in proprietary capital. The guidance required the presentation of net income and other comprehensive income in either one continuous statement or in two separate but consecutive statements. TVA chose the two statement approach. These changes became effective for TVA on October 1, 2012. The 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, 2013, were not effective and had not been adopted by TVA.

**Balance Sheet.** In December 2011, FASB issued guidance that requires additional disclosures relating to the rights of offset or other netting arrangements of assets and liabilities that are presented on a net or gross basis in the consolidated balance sheets. The guidance applies to derivative and other financial instruments and requires the disclosure of the gross amounts subject to offset, actual amounts offset in accordance with GAAP, and the related net exposure. These changes became effective for TVA on October 1, 2013, and are applied on a retrospective basis. This guidance relates solely to enhanced disclosures in the notes to the consolidated financial statements and does not have an impact on TVA's financial condition, results of operations, or cash flows.

**Comprehensive Income.** In February 2013, FASB issued guidance that requires public reporting companies under the Securities Act of 1933 to present information about reclassification adjustments from accumulated other comprehensive income in their annual and interim financial statements in a single location. The guidance requires that companies present the effect of significant amounts reclassified from each component of accumulated other comprehensive income based on its source and the income statement line items affected by the reclassification. This information may be disclosed either in a single note or parenthetically on the face of the financial statements. If a component is not required to be reclassified to net income in its entirety, companies must cross reference to the related footnote for additional information. These changes became effective for TVA on October 1, 2013, and are applied on a prospective basis. TVA has chosen to disclose the required information in a single note. This guidance relates solely to enhanced disclosures and does not have an impact on TVA's financial condition, results of operations, or cash flows.

### 3. Accounts Receivable, Net

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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

	2013	2012
Power receivables	\$1,495	\$1,585
Other receivables	73	88
Allowance for uncollectible accounts	(1	) (7
Accounts receivable, net	\$1,567	\$1,666

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## 4. Inventories, Net

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

Inventories, Net  
At September 30

	2013	2012
Materials and supplies inventory	\$620	\$605
Fuel inventory	494	508
Emission allowance inventory	14	12
Allowance for inventory obsolescence	(37	) (28
Inventories, net	\$1,091	\$1,097

## 5. Net Completed Plant

Net completed plant consisted of the following:

Net Completed Plant  
At September 30

	2013			2012		
	Cost	Accumulated Depreciation	Net	Cost	Accumulated Depreciation	Net
Coal-fired	\$13,847	\$8,429	\$5,418	\$13,726	\$7,962	\$5,764
Gas and oil-fired	3,386	1,008	2,378	3,334	916	2,418
Nuclear	18,725	9,103	9,622	18,042	8,791	9,251
Transmission	6,300	2,562	3,738	6,075	2,427	3,648
Hydroelectric	2,392	892	1,500	2,278	869	1,409
Other electrical plant	1,452	792	660	1,490	842	648
Subtotal	46,102	22,786	23,316	44,945	21,807	23,138
Multipurpose dams	928	356	572	928	347	581
Other stewardship	43	15	28	44	15	29
Subtotal	971	371	600	972	362	610
Total	\$47,073	\$23,157	\$23,916	\$45,917	\$22,169	\$23,748

## 6. 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

	2013	2012
EnergyRight® receivables	\$117	\$115
Unamortized debt issue cost of power bonds	75	70
Loans and other long-term receivables, net	73	76
Coal contract derivative assets	1	107
Prepaid capacity payments	62	59
Currency swap assets	28	21
Other	89	61

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Total other long-term assets	\$445	\$509
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TVA guarantees repayment on certain loans receivable from customers of TVA's LPCs in association with the EnergyRight® Solutions program. TVA sells the loans receivable to a third-party bank and has agreed with the bank to purchase any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. The transaction is accounted for as a financing arrangement. The loans receivable, and the financing obligation, are shown in Other long-term assets and Other long-term liabilities, respectively, on TVA's consolidated balance sheets. The current portion of the loans receivable and the associated financing obligation are shown in Current assets and Current liabilities, respectively, on TVA's consolidated balance sheets. At September 30, 2013, and 2012, the carrying amount of the loans receivable, net of discount, was approximately \$150 million. The carrying amount of the financing obligation was approximately \$186 million and \$185 million at September 30, 2013 and 2012, respectively. See Note 10.

## 7. 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

	2013	2012
Current regulatory assets		
Unrealized losses on commodity derivatives	\$183	\$310
Deferred nuclear generating units	237	237
Environmental agreements	73	87
Fuel cost adjustment receivable	—	68
Environmental cleanup costs – Kingston ash spill	68	72
Total current regulatory assets	561	774
Non-current regulatory assets		
Deferred pension costs and other post-retirement benefits costs	4,076	5,517
Unrealized losses on interest rate derivatives	808	1,332
Nuclear decommissioning costs	893	914
Environmental cleanup costs - Kingston ash spill	681	797
Construction costs	—	619
Non-nuclear decommissioning costs	571	550
Deferred nuclear generating units	1,438	473
Unrealized losses on commodity derivatives	139	335
Environmental agreements	189	237
Other non-current regulatory assets	336	353
Total non-current regulatory assets	9,131	11,127
Total regulatory assets	\$9,692	\$11,901
Current regulatory liabilities		
Fuel cost adjustment tax equivalents	\$176	\$173
Fuel cost adjustment liability	29	—
Unrealized gains on commodity derivatives	7	18
Total current regulatory liabilities	212	191
Non-current regulatory liabilities		
Unrealized gains on commodity derivatives	1	109
Total non-current regulatory liabilities	1	109

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Total regulatory liabilities	\$213	\$300
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Unrealized Gains (Losses) on Commodity Derivatives. Unrealized gains (losses) on coal purchase contracts, included as part of unrealized losses on commodity derivatives, relate to the mark-to-market ("MtM") valuation of coal purchase contracts that contain options to purchase additional or lesser quantities. 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

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contracts on a settlement basis for ratemaking purposes through the fuel cost adjustment. TVA has historically recognized 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 14.

Deferred gains and losses relating to TVA's Financial Trading Program ("FTP") represent net unrealized gains and losses on swaps, futures, options, and combinations of these instruments and are also included as part of unrealized losses on commodity derivatives. The program is used to reduce TVA's economic risk exposure associated with 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 to match the delivery period of the underlying commodity product. Net unrealized losses at September 30, 2013, and September 30, 2012, were approximately \$166 million and \$228 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 rate. 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 and Construction Costs. In July 2005, the TVA Board approved the amortization, and inclusion into rates, of TVA's \$3.9 billion investment in the two deferred nuclear generating units at Bellefonte over a 10-year recovery period beginning in 2006. In August 2011, the TVA Board approved the completion of Bellefonte Unit 1. Approximately \$619 million of the remaining balance in the deferred nuclear generating units regulatory asset at that date did not continue to be amortized into rates, but was to be included in the Bellefonte plant asset balance at completion. This amount had been segregated into a separate non-current regulatory asset account titled Construction costs. TVA is evaluating the completion of Bellefonte Unit 1. In the interim, work at the site has been slowed to better allocate resources on nearer-term priorities as both budget and staffing levels for the project have been reduced in the 2014 budget. TVA believes that the resulting budgeting and staffing levels should be sufficient to preserve Bellefonte for potential future development. TVA plans to utilize its integrated resource planning process to help determine how Bellefonte best supports TVA's overall efforts to continue to meet customer demand with low-cost, reliable power. 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. Additionally, the Board approved combining the amounts related to Bellefonte previously included in Construction in progress, the \$619 million in Regulatory asset-Construction costs and the remaining amounts included in Regulatory asset-Deferred nuclear generating units into a single regulatory asset titled Deferred nuclear generating units totaling \$1.7 billion at September 30, 2013. Such amounts have been classified as a Regulatory asset in the September 30, 2013 balance sheet. The 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 Federal Facilities Compliance Agreement with the EPA and the agreement with Alabama, Kentucky, North Carolina, Tennessee, the Sierra Club, National Parks Conservation Association, and Our Children's Earth Foundation (collectively, the "Environmental Agreements") (see Note 20 — 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 2013, \$52 million has been paid with respect to energy efficiency projects, \$36 million has been paid to Alabama, Kentucky, North Carolina, and Tennessee, and \$10 million has been paid with respect to civil penalties. The remaining 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. At September 30, 2009, TVA's remediation cost estimate of \$933 million was deferred as a regulatory asset. During 2010, the estimate was revised and increased by \$192 million to a total estimate of \$1.1 billion. The additional amount will be amortized over the remaining term. Amounts included as a current regulatory asset on TVA's consolidated balance sheets represent the amount to be amortized in the next 12 months. Any future revisions to the estimate will be amortized as a change in estimate over the remaining term.

**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 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

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offset to accumulated other comprehensive income ("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. These costs are included in other non-current regulatory assets. See Note 19 — Obligations and Funded Status.

Unrealized Losses on Interest Rate Derivatives. TVA uses regulatory accounting treatment to defer the MtM unrealized gains and losses on certain interest rate derivative contracts to reflect that the gain or loss is included in the ratemaking formula when these contracts actually settle. The unrealized losses on these interest rate derivatives are recorded on TVA's 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. TVA has established an Asset Retirement Trust ("ART") to more effectively segregate, manage, and invest funds to help meet future AROs. The funds from the ART may be used, among other things, to pay the costs of retiring non-nuclear long-lived assets. The costs of retiring non-nuclear long-lived assets represent the net deferred costs related to the future closure and retirement of TVA's 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. There is not a specified recovery period; therefore, the regulatory asset is classified as long-term, consistent with the ART investments and ARO liability.

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.

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## 8. Variable Interest Entities

A VIE is an entity that either (i) has insufficient equity to permit the entity to finance its activities without additional subordinated financial support or (ii) 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 variable interest entity, 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.

## Southaven

On August 6, 2013, TVA and the United States of America entered into an asset purchase agreement for the reacquisition by TVA (as agent for the United States of America with respect to real property) of a 90 percent undivided interest in the Southaven Combined Cycle Combustion Turbine Facility ("Southaven CCF") and related real property located in Southaven, Mississippi (the "Asset Purchase Agreement") from Seven States Power Corporation ("Seven States"), through its subsidiary, Seven States Southaven, LLC ("SSSL"). Seven States was formed by LPCs that distribute TVA power. Seven States originally purchased the 90 percent interest in the Southaven CCF and the related real property from TVA in 2008 and leased the interest back to TVA. TVA continued to operate the Southaven CCF. See Note 13 for further discussion regarding the purchase arrangement.

As a condition to the closing of the Asset Purchase Agreement, on August 9, 2013, TVA entered into a lease financing arrangement with Southaven Combined Cycle Generation, LLC ("SCCG") in which TVA agreed to lease the Southaven CCF to SCCG for a term of approximately 31 years (the "Southaven Head Lease") in exchange for a one-time rental payment of \$400 million to TVA. Also on August 9, 2013, SCCG leased the Southaven CCF back to TVA for a term of approximately 20 years (the "Southaven Facility Lease") in exchange for scheduled amortizing, semi-annual lease payments commencing on February 15, 2014 and ending on August 15, 2033. Throughout the term of the Southaven Facility Lease, TVA is responsible for the operation and maintenance (and improvement to the extent required by applicable law) of the Southaven CCF and takes all power generated by the facility. The Southaven Head Lease will terminate upon expiration of the Southaven Facility Lease so long as all payments under the Southaven Facility Lease have been made and there is no significant event of default for which SCCG has exercised remedies to dispossess TVA of the Southaven CCF. Upon expiration of the Southaven Head Lease and Southaven Facility Lease, TVA will own the Southaven CCF at no additional cost to TVA.

SCCG, a newly formed special single-purpose entity, was established to finance the Southaven CCF through a \$360 million secured notes issuance (the "SCCG notes") and the issuance of \$40 million of membership interests. See Note 12 —Secured Debt of VIEs. The membership interests were purchased by Southaven Holdco, LLC ("SHLLC"), also a

newly-formed special single-purpose entity, established to acquire and hold the membership interests of SCCG. They were purchased by SHLLC with proceeds from the issuance of \$40 million of secured notes (the "SHLLC notes") and are subject to mandatory redemption pursuant to scheduled amortizing, semi-annual payments due each August 15 and February 15, with a final payment due on August 15, 2033. See Note 10 — Membership Interests of VIE Subject to Mandatory Redemption. The payment dates for the mandatorily redeemable membership interests are the same as those of the SHLLC notes, the SCCG notes, and the lease payments under the Southaven Facility Lease.

The sale of the SCCG notes, the membership interests in SCCG, and the SHLLC notes closed on August 9, 2013. The SCCG notes are secured by TVA's lease payments. The SHLLC notes are secured by SHLLC's investment in, and amounts receivable from, SCCG. TVA's lease payments, under the terms of the Southaven Facility Lease, are equal to the sum of (i) SCCG's semi-annual debt service payments, (ii) SHLLC's semi-annual debt service payments, and (iii) scheduled pre-determined payments to be made to SSSL on each lease payment date by SHLLC as agreed in the Asset Purchase Agreement and SHLLC's formation documents (the "Seven States Return"). In addition to the lease payments, TVA pays the administrative and miscellaneous expenses incurred by SCCG and SHLLC. Certain agreements related to this transaction contain default and acceleration provisions.

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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 SCCG 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 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 and Holdco as of September 30, 2013 and 2012, and SCCG as of September 30, 2013, as reflected in the Consolidated Balance Sheets are as follows:

**Summary of Impact of VIEs on Consolidated Balance Sheets**

	At September 30, 2013	At September 30, 2012
Current liabilities		
Accrued interest	\$12	\$10
Current portion of membership interests of VIE subject to mandatory redemption	2	—
Current maturities of long-term debt of VIE	30	13
Total current liabilities	44	23
Other liabilities		
Membership interests of VIE subject to mandatory redemption	38	—
Total other liabilities	38	—
Long-term debt, net		

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Long-term debt of VIE	1,311	981
Total long-term debt, net	1,311	981
Total liabilities	\$1,393	\$1,004

Interest expense of \$50 million and \$34 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, 2013 and 2012, 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.

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9. Kingston Fossil Plant Ash Spill

The Event

In December 2008, one of the dredge cells at the Kingston Fossil Plant ("Kingston") failed, and approximately five million cubic yards of water and coal fly ash flowed out of the cell. TVA is continuing cleanup and recovery efforts in conjunction with federal and state agencies. TVA completed the removal of time-critical ash from the river during the third quarter of 2010, and removal of the remaining ash is considered to be non-time-critical. 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 estimates that the physical cleanup work (final removal) will be completed in the spring of 2015. A final assessment, issuance of a completion report, and approval by the State of Tennessee and the EPA are expected to occur by the third quarter of 2015.

Claims and Litigation

See Note 20 — Legal Proceedings — Legal Proceedings Related to the Kingston Ash Spill and — Civil Penalty and Natural Resource Damages for the Kingston Ash Spill.

Financial Impact

Because of the uncertainty at this time of the final costs to complete the work prescribed by the ash disposal plan, a range of reasonable estimates has been developed by cost category. Known amounts, most likely scenarios, or the low end of the range for each category have been accumulated and evaluated to determine the total estimate. The range of costs varies from approximately \$1.1 billion to approximately \$1.2 billion.

TVA recorded an estimate of \$1.1 billion for the cost of cleanup related to this event. 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 the estimate changes, additional costs may be deferred and charged to expense prospectively as they are collected in future rates.

As work continues to progress and more information is available, TVA will review its estimates and revise them as appropriate. TVA has accrued a portion of the estimated cost in current liabilities, with the remaining portion shown as a long-term liability on TVA's consolidated balance sheets. Amounts spent since the event through September 30, 2013, totaled \$956 million. The remaining estimated liability at September 30, 2013, was \$169 million.

TVA has not included the following categories of costs in the above estimate since it has been determined that these costs are currently either not probable or not reasonably estimable: penalties (other than the penalties set out in a June 2010 TDEC order), regulatory directives, natural resources damages (other than payments required under a memorandum of agreement with TDEC and the U.S. Fish and Wildlife Service establishing a process and a method for resolving the natural resource damages claim), future lawsuits, future claims, long-term environmental impact costs, final long-term disposition of the ash processing area, and costs associated with new laws and regulations. There are certain other costs that will be incurred that have not been included in the estimate as they are appropriately accounted for in other areas of the consolidated financial statements. Associated capital asset purchases are recorded in property, plant, and equipment. Ash handling and disposition costs from current plant operations are recorded in operating expenses. A portion of the dredge cell closure costs are also excluded from the estimate, as they are included in the non-nuclear ARO liability.



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. TVA has received insurance proceeds of \$92 million. 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. Any amounts received related to insurance settlements are being recorded as reductions to the regulatory asset and will reduce amounts collected in future rates.

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## 10. 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 20 — Legal Proceedings — Environmental Agreements). The table below summarizes the types and amounts of Other long-term liabilities:

## Other Long-Term Liabilities

At September 30

	2013	2012
Interest rate swap liabilities	\$1,199	\$1,723
Environmental agreements liability	190	237
EnergyRight® financing obligation	149	148
Membership interests of VIE subject to mandatory redemption	38	—
Coal contract derivative liabilities	35	205
Commodity swap derivative liabilities	36	59
Currency swap liabilities	15	54
Other	199	254
Total other long-term liabilities	\$1,861	\$2,680

**EnergyRight® Purchase Obligation.** TVA guarantees repayment on certain loans receivable from customers of TVA's LPCs in association with the EnergyRight® Solutions program. TVA sells the loans receivable to a third-party bank and has agreed with the bank to purchase any loan receivable that has been in default for 180 days or more or that TVA has determined is uncollectible. The transaction is accounted for as a financing arrangement. As of September 30, 2013 and September 30, 2012, the carrying amount of the financing obligation was approximately \$186 million and \$185 million, respectively. As of September 30, 2013 and 2012, \$37 million of this was current and included in Accounts payable and accrued liabilities. See Note 6.

**Membership Interests of VIE Subject to Mandatory Redemption.** On August 9, 2013, SCCG issued 100 percent of its membership interests to SHLLC for a total of \$40 million. The membership interests in SCCG are mandatorily redeemable pursuant to a schedule of payments that indicates the amount of each payment and the corresponding dates on which each payment is due. The schedule requires SCCG to make semi-annual payments to SHLLC sufficient to provide returns on, as well as returns of, capital until the investment has been repaid in full, including a \$4 million balloon payment as part of the final disbursement which is due on August 15, 2033. The return on capital includes the Seven States Return. These payments provide a return on investment to SHLLC of 7.0 percent, which is reflected as interest expense in the consolidated statements of operations. As of September 30, 2013, the carrying amount of the Membership interests of VIE subject to mandatory redemption was \$40 million. As of September 30, 2013, \$2 million of this was current and included in Accounts payable and accrued liabilities.

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.

## 11. Asset Retirement Obligations

During the year ended September 30, 2013, TVA's total ARO liability increased \$199 million. The increase in the liability resulted from accretion and a change in estimate. These items were partially offset by ash area settlement

projects that were conducted during the year ended September 30, 2013. The nuclear and non-nuclear accretion expenses were deferred as regulatory assets, and \$40 million of the related regulatory assets was amortized into expense as this amount was collected in rates. The change in estimate is a result of TVA's biennial update to its nuclear ARO in order to adjust for changes in expected labor factors, burial rates, and fuel expenses, among other factors. This review resulted in a \$66 million increase to the nuclear ARO.

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## Reconciliation of Asset Retirement Obligation Liability

	Nuclear	Non-Nuclear	Total	
Balance at September 30, 2011	\$2,091	\$1,047	\$3,138	
Settlements (ash storage areas)	—	(22	) (22	)
Accretion (recorded as regulatory asset)	117	55	172	
Additional obligations	—	2	2	
Change in estimate	—	(1	) (1	)
Balance at September 30, 2012	\$2,208	\$1,081	\$3,289	
Settlements (ash storage areas)	—	(37	) (37	)
Accretion (recorded as regulatory asset)	125	45	170	
Additional obligations	—	—	—	
Change in estimate	66	—	66	
Balance at September 30, 2013	\$2,399	\$1,089	\$3,488	*

## Note

\* The current portion of ARO in the amount of \$16 million is included in Accounts payable and accrued liabilities.

## 12. 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, 2013, 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"). TVA 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 out of 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.

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, 2013, 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, 2010, and must next meet the bondholder protection test for the five-year period ending September 30, 2015.

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### 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 8 — 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.

Approximately \$970 million of the proceeds from the secured notes issuances was paid to TVA in accordance with the terms of the Head Lease and CMA. See Note 8. JSCCG deposited approximately \$30 million with a lease indenture trustee to fund the payments due on July 15, 2012, in connection with the JSCCG notes and Holdco's membership interests in JSCCG. TVA used the proceeds from the transaction to meet its requirements under the TVA Act.

Secured debt of VIEs, including current maturities, outstanding at September 30, 2013 and 2012 totaled approximately \$1.3 billion and \$994 million, respectively.

### Short-Term Debt

The weighted average rates applicable to short-term debt outstanding at September 30, 2013, 2012, and 2011, were 0.04 percent, 0.09 percent, and 0.00 percent, respectively. During 2013, 2012, and 2011, the maximum outstanding balances of TVA short-term borrowings held by the public were \$3.4 billion, \$3.2 billion, and \$1.4 billion, respectively. For these same years, the average amounts (and weighted average interest rates) of TVA short-term borrowings were approximately \$1.9 billion (0.08 percent), \$1.1 billion (0.08 percent), and \$363 million (0.14 percent), respectively.

### Put and Call Options

Bond issues of \$848 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. Twenty-three Bond issues totaling \$708 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. There is no accounting difference between a "survivor's option" put and a "regular" put on any TVA put Bond. These Bonds are classified as long-term as of September 30, 2013 and 2012.

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 six times, from an initial rate of 6.75 percent to the current rate of 3.830 percent. In connection with these resets, \$251 million of the Bonds have been redeemed, so that \$324 million of the Bonds were outstanding at September 30, 2013. The coupon rate for the 1999 Series A PARRS, which mature in May 2029, has been reset five times, from an initial rate of 6.50 percent to the current rate of 3.955 percent. In connection with these resets, \$255 million of the Bonds have been redeemed, so that \$270 million of the Bonds were outstanding at September 30, 2013.

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, which occur in the third quarter of TVA's fiscal year. 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, 2013, 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.

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## Debt Securities Activity

The table below summarizes the long-term debt securities activity for the period from October 1, 2011, to September 30, 2013.

## Debt Securities Activity

For the year ended September 30

	2013	2012
Issues		
Debt of variable interest entities	\$360	\$1,000
electronotes <sup>®</sup>	152	135
2012 Series A <sup>(1)</sup>	—	1,000
2012 Series B <sup>(2)</sup>	1,000	—
2013 Series A <sup>(3)</sup>	1,000	—
Discount on debt issues	(30	) (9
Total	\$2,482	\$2,126
Redemptions/Maturities <sup>(4)</sup>		
Debt of variable interest entities	\$13	\$6
electronotes <sup>®</sup>	50	189
1992 Series D	—	1,000
1998 Series C	1,359	—
1998 Series D	2	5
1999 Series A	1	2
2000 Series F	—	29
2002 Series A	—	1,486
2003 Series C	940	—
2009 Series A	4	4
2009 Series B	2	2
Total	\$2,371	\$2,723

## Notes

(1) The 2012 Series A bonds were issued at 99.12 percent of par.

(2) The 2012 Series B bonds were issued at 97.49 percent of par.

(3) The 2013 Series A bonds were issued at 99.52 percent of par.

(4) All redemptions were at 100 percent of par.



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## Debt Outstanding

Total debt outstanding at September 30, 2013, and 2012, consisted of the following:

## Short-Term Debt

At September 30

CUSIP or Other Identifier	Maturity	Call/(Put) Date	Coupon Rate	2013 Par	2012 Par
Short-term debt, net				\$2,432	\$1,507
Current maturities of long-term debt of variable interest entities				30	13
Current maturities of power bonds					
880591EE8	5/15/2014		2.250%	3	3
880591EF5	6/15/2014		3.770%	26	3
880591CW0	3/15/2013		6.000%	—	1,359
880591DW9	8/1/2013		4.750%	—	940
880591TEL1	5/15/2014		2.650%	3	3
Total current maturities of power bonds				32	2,308
Total current debt outstanding, net				\$2,494	\$3,828

Long-Term Debt<sup>(1)</sup>

At September 30

CUSIP or Other Identifier	Maturity	Coupon Rate	Call Date	2013 Par	2012 Par	Stock Exchange Listings
electronotes <sup>®(2)</sup>	05/15/2020 - 02/15/2043	2.375 - 4.875%	4/15/2013 - 02/15/2018	\$723	\$622	None
880591DY5	6/15/2015	4.375%		1,000	1,000	New York, Luxembourg
880591EE8 <sup>(3)</sup>	11/15/2015	2.250%		4	8	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	—	New York
880591EL2	2/15/2021	3.875%		1,500	1,500	New York
880591DC3	6/7/2021	5.805% (4)		324	324	New York, Luxembourg
880591EN8	8/15/2022	1.875%		1,000	1,000	New York
880591CJ9	11/1/2025	6.750%		1,350	1,350	Hong Kong, Luxembourg, Singapore
880591300 <sup>(5)</sup>	6/1/2028	4.060%		324	326	New York
880591409 <sup>(5)</sup>	5/1/2029	4.150%		270	271	New York
880591DM1	5/1/2030	7.125%		1,000	1,000	



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880591DP4	6/7/2032	6.587%	(4 )	405	404	New York, Luxembourg
880591DV1	7/15/2033	4.700%		472	472	New York, Luxembourg
880591EF5 <sup>(3)</sup>	6/15/2034	3.770%		414	440	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	—	New York
880591DU3	6/7/2043	4.962%	(4 )	243	242	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
Subtotal				22,400	20,330	
Unamortized discounts, premiums, and other				(85	) (61	)
Total long-term outstanding power bonds, net				22,315	20,269	
Long-term debt of variable interest entities				1,311	981	
Total long-term debt, net				\$23,626	\$21,250	

## Notes

(1) Includes net exchange losses from currency transactions of \$43 million at September 30, 2013 and \$41 million at September 30, 2012.

(2) Includes one electronotes<sup>®</sup> issue 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.

## Maturities Due in the Year Ending September 30

	2014	2015	2016	2017	2018	Thereafter	Total
Long-term power bonds and long-term debt of variable interest entities including current maturities <sup>(1)</sup>	\$62	\$1,064	\$65	\$1,590	\$1,718	\$19,231	\$23,730

## Note

(1) Does not include noncash items of foreign currency exchange loss of \$43 million and net discount on sale of Bonds of \$85 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 fiscal year 2014 with a maturity date of September 30, 2014. Access to this credit facility or other similar financing arrangements with the U.S. Treasury has been available to TVA since the 1960s. TVA plans to use the U.S. Treasury credit facility as 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, 2013. 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 \$1.0 billion credit facility matures on June 25, 2017, another \$1.0 billion credit facility matures on December 13, 2017, and the \$0.5 billion credit facility matures on April 5, 2018. The interest rate on any borrowing under these facilities varies based on market

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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, 2013, and September 30, 2012, there were \$0.8 billion and \$1.1 billion, respectively, of letters of credit outstanding under the facilities, and there were no borrowings outstanding. See Note 14 — Other Derivative Instruments — Collateral.

### 13. Leaseback Obligations

#### 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 a leaseback transaction 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, 2013, and September 30, 2012, the outstanding leaseback obligations related to CTs and QTE were \$761 million and \$825 million, respectively.

In 2008, TVA acquired the Southaven CCF pursuant to an agreement under which Seven States had an option to purchase a 90 percent undivided interest in the facility, which option Seven States subsequently exercised through its subsidiary, SSSL. SSSL financed the purchase of its undivided interest in the facility with funds received from a credit agreement with a third-party lender. SSSL leased its undivided interest in the facility back to TVA, and TVA continued to operate the facility. TVA accounted for the leaseback obligation under the financing method.

On August 6, 2013, TVA and the United States of America entered into the Asset Purchase Agreement involving the Southaven CCF, underlying real property, and related assets, whereby TVA (as agent for the United States of America with respect to real property) re-acquired the undivided 90 percent interest in the facility from SSSL. In exchange for SSSL's undivided interest in the facility, TVA paid the recorded amount of the buy-back obligation as of the date of closing of approximately \$364 million. SSSL used these proceeds to repay the amounts outstanding under its credit agreement. The credit agreement was closed upon repayment.

Also, as a condition to the closing of the Asset Purchase Agreement, TVA was required to enter into the Southaven Head Lease and Southaven Facility Lease through which SSSL will receive semi-annual payments over 20 years each February 15 and August 15, beginning February 15, 2014, with the final payment due on August 15, 2033. These payments, totaling approximately \$9 million, will be funded by TVA as part of the lease payments to SCCG that will be paid to SHLLC. The payments to be made to SSSL are included in a schedule to SHLLC's formation documents. SSSL has no equity or debt investment in, and has made no contribution to, SHLLC. TVA entered into the Southaven Head Lease and the Southaven Facility Lease on August 9, 2013. See Note 8 and Note 10 — Membership Interests of VIE Subject to Mandatory Redemption.

#### Lease Ratings Downgrade

On November 29, 2011, one credit rating agency downgraded its ratings on various long-term leases backed by obligations of TVA from AA+ to AA-, and set the outlook on the ratings to stable. The downgrades include leaseback obligations related to CTs and QTE. According to the rating agency, the downgrade reflects the application of new criteria to the leases, rather than any TVA action, event, or change in business conditions. While the downgrades do not change TVA's obligations under the leases, they may affect the cost to TVA of similar future financings.

#### 14. Risk Management Activities and Derivative Transactions

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 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 investment funds, it is TVA's policy to enter into these derivative transactions solely for hedging purposes and not for speculative purposes.

##### 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.

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## Summary of Derivative Instruments That Receive Hedge Accounting Treatment (part 1)

Derivatives in Cash Flow Hedging Relationship	Objective of Hedge Transaction	Accounting for Derivative Hedging Instrument Cumulative unrealized gains and losses are recorded in OCI and reclassified to interest expense to the extent they are offset by cumulative gains and losses on the hedged transaction	Amount of Mark-to-Market <sup>(1)</sup> Gain (Loss) Recognized in Other Comprehensive Income (Loss) <sup>(2)</sup> Years Ended September 30	
			2013	2012
Currency swaps	To protect against changes in cash flows caused by changes in foreign currency exchange rates (exchange rate risk)		\$78	\$99

## Notes

(1) Mark-to-market ("MtM")

(2) Other comprehensive income (loss) ("OCI")

## Summary of Derivative Instruments That Receive Hedge Accounting Treatment (part 2)

Derivatives in Cash Flow Hedging Relationship	Amount of Gain (Loss) Reclassified from OCI to Interest Expense Years Ended September 30	
	2013	2012
Currency swaps	\$(1	) \$(35

## Note

There were no ineffective portions or amounts excluded from effectiveness testing for any of the periods presented.

## Summary of Derivative Instruments That Do Not Receive Hedge Accounting Treatment

Derivative Type	Objective of Derivative	Accounting for Derivative Instrument MtM gains and losses are recorded as regulatory assets or liabilities until settlement, at which time the gains/losses are recognized in gain/loss on derivative contracts.	Amount of Gain (Loss) Recognized in Income on Derivatives Years Ended September 30	
			2013	2012
Interest rate swaps	To fix short-term debt variable rate to a fixed rate (interest rate risk)		\$—	\$—
Commodity contract derivatives	To protect against fluctuations in market prices of purchased coal or	MtM gains and losses are recorded as regulatory assets or liabilities.	(11	) (22

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natural gas (price risk)      Realized gains and losses due to contract settlements are recognized in fuel expense as incurred.

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.	(126	) (342	)
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Note  
 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 2013 and 2012.



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## Mark-to-Market Values of TVA Derivatives

At September 30

	2013		2012	
Derivatives that Receive Hedge Accounting Treatment:				
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Currency swaps				
£200 million Sterling	\$(15	) Other long-term liabilities	\$(23	) Other long-term liabilities
£250 million Sterling	51	Other long-term assets	21	Other long-term assets
£150 million Sterling	10	Other long-term assets	(31	) Other long-term liabilities
Derivatives that Do Not Receive Hedge Accounting Treatment:				
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Interest rate swaps				
\$1.0 billion notional	(886	) Other long-term liabilities	(1,247	) Other long-term liabilities
\$476 million notional	(300	) Other long-term liabilities	(458	) Other long-term liabilities
\$42 million notional	(13	) Other long-term liabilities	(18	) Other long-term liabilities
		Other long-term assets \$1;		Other long-term assets
		Other current assets \$2;		\$107; Other current assets
Commodity contract derivatives	(141	) Other long-term liabilities	(267	) long-term liabilities
		\$(35); Accounts payable		\$(205); Accounts payable
		and accrued liabilities		and accrued liabilities
		\$(109)		\$(181)
FTP				
Margin cash account <sup>(1)</sup>	11	Other current assets	43	Other current assets
		Other current assets \$(97);		Other long-term assets \$2;
		Other long-term liabilities		Other current assets
Derivatives under FTP <sup>(2)</sup>	(166	) \$(36); Accounts payable	(228	) liabilities \$(59); Accounts
		and accrued liabilities		payable and accrued
		\$(33)		liabilities \$(67)

## Notes

(1) In accordance with certain credit terms, TVA uses leverage to trade financial instruments under the FTP. Therefore, the margin cash account balance does not represent 100 percent of the net market value of the derivative positions outstanding as shown in the Derivatives Under Financial Trading Program table.

(2) The September 30, 2013, and September 30, 2012 balances in the Derivatives Under Financial Trading Program table show all open derivative positions in the FTP.

## 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, 2013:

## Currency Swaps Outstanding

At September 30, 2013

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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 transaction gain on the Bond liability is offset by a currency exchange loss on the swap contract. Conversely, when the dollar weakens against the British pound sterling, the transaction 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 Accumulated other comprehensive income (loss). 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.

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## 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 2013 and 2012, the changes in market value of the interest rate derivatives resulted in deferred unrealized gains (losses) of \$524 million and \$(168) million, respectively. There were no realized gains or losses for the years ended 2013 and 2012.

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. At September 30, 2013, and September 30, 2012, TVA's coal contract derivatives had net market values of \$(140) million and \$(267) million, respectively, which TVA deferred as regulatory assets or liabilities on a gross basis. At September 30, 2013, TVA's coal contract derivatives had terms of up to five years.

The total market value of natural gas derivative contracts was \$(1) million at September 30, 2013, and was less than \$(1) million at September 30, 2012. At September 30, 2013, natural gas derivative contracts had terms of up to two years.

Commodity Contract Derivatives  
At September 30

	2013			2012		
	Number of Contracts	Notional Amount	Fair Value (MtM)	Number of Contracts	Notional Amount	Fair Value (MtM)
Coal contract derivatives	19	43 million tons	\$(140)	23	46 million tons	\$(267)
Natural gas contract derivatives	13	39 million mmBtu	\$(1)	25	51 million mmBtu	\$—

Derivatives Under 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, 2013 and 2012, 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, 2013 and 2012, 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, 2013, and swap contracts under the FTP had remaining terms of five years or less.



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## Derivatives Under Financial Trading Program

	At September 30, 2013		At September 30, 2012	
	Notional Amount	Fair Value (MtM) (in millions)	Notional Amount	Fair Value (MtM) (in millions)
Natural gas (in mmBtu)				
Futures contracts	—	\$—	—	\$—
Swap contracts	152,922,500	(169	) 294,462,500	(232
Option contracts	—	—	—	—
Natural gas financial positions	152,922,500	\$(169	) 294,462,500	\$(232
Fuel oil/crude oil (in barrels)				
Futures contracts	—	\$—	—	\$—
Swap contracts	1,205,000	3	1,390,000	4
Option contracts	—	—	—	—
Fuel oil/crude oil financial positions	1,205,000	\$3	1,390,000	\$4

## Note

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 broker or other counterparty. Notional amounts disclosed represent the net absolute value of contractual amounts.

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 contract. In addition to the open commodity derivatives disclosed above, TVA had closed derivative contracts with market values of \$(8) million at September 30, 2013, and \$(21) million at September 30, 2012. 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)	2013	2012
Natural gas	\$(169	) \$(232
Fuel oil/crude oil	3	4
Coal	—	—

## Financial Trading Program Realized Gains (Losses)

Years Ended September 30

Decrease (increase) in fuel expense	2013	2012
Natural gas	\$(78	) \$(116
Fuel oil/crude oil	4	10
Coal	(1	) —



Table of ContentsFinancial Trading Program Realized Gains (Losses)  
Years Ended September 30

Decrease (increase) in purchased power expense	2013	2012
Natural gas	\$ (51	) \$ (236

## Other Derivative Instruments

**Investment Fund Derivatives.** Investment funds consist primarily of funds held in the NDT, ART, and SERP. All securities in the trusts are classified as trading. See Note 15 — Investments 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, 2013, and September 30, 2012, the fair value of derivative instruments in these trusts was not material to TVA's consolidated financial statements.

**Collateral.** TVA's interest rate swaps and its currency swaps 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, 2013, the aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a liability position was \$1.2 billion. TVA's collateral obligations at September 30, 2013, under these arrangements, was \$0.8 billion, for which TVA had posted \$0.8 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 ("S&P") or Moody's Investors Service ("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, 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 September 30, 2013, and 26 percent of total outstanding accounts receivable at September 30, 2012. Power sales to TVA's largest directly served industrial

customer represented three percent and five percent of TVA's total operating revenues for the years ended September 30, 2013 and 2012, respectively. TVA has determined that this customer has the equivalent of a non-investment grade credit rating. As a result of its credit ratings, this customer has provided credit assurance to TVA under the terms of its power contract. On May 24, 2013, the customer announced the cessation of enrichment activities at one of its sites. TVA and the customer subsequently completed agreements to extend power sales to facilitate the cessation of enrichment activities and to support non-enrichment activities at the site at a greatly reduced level. These sales may continue to be extended.

**Credit of Derivative Counterparties.** TVA has entered into derivative contracts 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, 2013, all of TVA's currency swaps, interest rate swaps, and commodity derivatives under the FTP were with counterparties whose Moody's credit rating was Baa1 or higher. At September 30, 2013, all of TVA's coal contract derivatives were with counterparties whose Moody's credit rating, or TVA's



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internal analysis when such information was unavailable, was B3 or higher. See Derivatives Not Receiving Hedge Accounting Treatment.

TVA currently utilizes two active 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. See notes to the Mark-to-Market Values of TVA Derivatives table.

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. To help ensure a reliable supply of coal, TVA had coal contracts with multiple suppliers at September 30, 2013. 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.

15. 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.
Level 2	—	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 3	—	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.

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 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 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.

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## Investments Funds

At September 30, 2013, Investment funds were composed of \$1.7 billion of securities classified as trading and measured at fair value and \$1 million of equity investments not required to be measured at fair value. Trading securities are held in the NDT, ART, and SERP. 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 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 NDT, ART, and SERP are invested in securities generally designed to achieve a return in line with overall equity market performance.

The NDT, ART, and SERP 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 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 \$149 million at September 30, 2013. These investments have no redemption or limited redemption options and may also have imposed 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 Level 3 within the fair value hierarchy.

Commingled funds represent investment funds comprising multiple individual financial instruments. The commingled funds held by the NDT, ART, and SERP 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 (Level 1) or measured using observable inputs for similar instruments (Level 2). 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 Level 2 valuations.

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	2013	2012
SERP Other income (expense)	\$2	\$4

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NDT	Regulatory asset	48	121
ART	Regulatory asset	33	27

Currency and Interest Rate Derivatives

See Note 14 — 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.

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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. 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.

See Note 14 — 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.

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 2011) 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 \$6 million decrease in the fair value of assets and a \$1 million decrease in the fair value of liabilities at September 30, 2013.

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, 2013, and September 30, 2012. 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.

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## Fair Value Measurements

At September 30, 2013

Assets	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Netting <sup>(1)</sup>	Total
Investments					
Equity securities	\$ 151	\$—	\$—	\$—	\$ 151
Debt securities					
U.S. government corporations and agencies	38	67	—	—	105
Corporate debt securities	—	255	—	—	255
Residential mortgage-backed securities	—	25	—	—	25
Commercial mortgage-backed securities	—	7	—	—	7
Collateralized debt obligations	—	10	—	—	10
Private partnerships	—	—	159	—	159
Commingled funds <sup>(2)</sup>					
Equity security commingled funds	—	741	—	—	741
Debt security commingled funds	—	248	—	—	248
Total investments	189	1,353	159	—	1,701
Currency swaps	—	61	—	—	61
Commodity contract derivatives	—	—	3	—	3
Commodity derivatives under FTP					
Swap contracts	—	101	—	(97	) 4
Total commodity derivatives under FTP	—	101	—	(97	) 4
Total	\$ 189	\$ 1,515	\$ 162	\$ (97	) \$ 1,769
Liabilities	Quoted Prices in Active Markets for Identical Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Netting <sup>(1)</sup>	Total
Currency swaps	\$—	\$ 15	\$—	\$—	\$ 15
Interest rate swaps	—	1,199	—	—	1,199
Commodity contract derivatives	—	1	143	—	144
Commodity derivatives under FTP					
Swap contracts	—	267	—	(97	) 170
Total commodity derivatives under FTP	—	267	—	(97	) 170

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Total	\$—	\$1,482	\$143	\$(97	) \$1,528
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Notes

(1) 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 broker.

(2) Commingled funds represent investment funds comprising multiple individual financial instruments and are classified in the table based on their existing investment portfolio as of the measurement date. Commingled funds primarily composed of one class of security are classified in that category.

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## Fair Value Measurements

At September 30, 2012

Assets	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Netting <sup>(1)</sup>	Total
Investments					
Equity securities	\$ 173	\$—	\$—	\$—	\$ 173
Debt securities					
U.S. government corporations and agencies	59	103	—	—	162
Corporate debt securities	—	197	—	—	197
Residential mortgage-backed securities	—	20	—	—	20
Commercial mortgage-backed securities	—	6	—	—	6
Collateralized debt obligations	—	12	—	—	12
Private partnerships	—	—	53	—	53
Commingled funds <sup>(2)</sup>					
Equity security commingled funds	—	657	—	—	657
Debt security commingled funds	—	182	—	—	182
Total investments	232	1,177	53	—	1,462
Currency swaps	—	21	—	—	21
Commodity contract derivatives	—	—	119	—	119
Commodity derivatives under FTP					
Swap contracts	—	123	—	(115	) 8
Total commodity derivatives under FTP	—	123			