

Tennessee Valley Authority  
Form 10-K  
November 16, 2012  
Table of Contents

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

(MARK ONE)

ANNUAL REPORT PURSUANT TO SECTION 13, 15(d), OR 37 OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended September 30, 2012

OR

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission file number 000-52313

TENNESSEE VALLEY AUTHORITY

(Exact name of registrant as specified in its charter)

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

62-0474417

(IRS Employer Identification No.)

400 W. Summit Hill Drive

Knoxville, Tennessee

(Address of principal executive offices)

(865) 632-2101

(Registrant's telephone number, including area code)

37902

(Zip Code)

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

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

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

Yes  No

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

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

Yes  No

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

Yes  No

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

Edgar Filing: Tennessee Valley Authority - Form 10-K

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

(Do not check if a smaller reporting company)

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

Table of Contents

Table of Contents

GLOSSARY OF COMMON

ACRONYMS.....

FORWARD-LOOKING

INFORMATION.....

GENERAL

INFORMATION.....

PART I

ITEM 1.

BUSINESS.....

The Corporation.....

Service Area.....

Customers.....

Rates.....

Current Power Supply.....

Future Power Supply.....

Fuel Supply.....

Transmission.....

Weather and Seasonality.....

Competition.....

Research and Development.....

Environmental Stewardship

Activities.....

Economic Development Activities.....

Regulation.....

Taxation and Tax Equivalents.....

Environmental Matters.....

Employees.....

ITEM 1A. RISK

FACTORS.....

ITEM 1B. UNRESOLVED STAFF

COMMENTS.....

ITEM 2.

PROPERTIES.....

Generating Properties.....

Transmission Properties.....

Natural Resource Stewardship Properties.....

Buildings.....

Disposal of Property.....

ITEM 3. LEGAL

PROCEEDINGS.....

ITEM 4. MINE SAFETY  
DISCLOSURES.....

PART II

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

ITEM 6. SELECTED FINANCIAL  
DATA.....

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

Overview.....

TVA's Business and Vision.....

Executive Overview.....

Results of Operations.....

Liquidity and Capital Resources.....

Off-Balance Sheet Arrangements.....

Key Initiatives and Challenges.....

Critical Accounting Policies and

Estimates.....

Fair Value Measurements.....

New Accounting Standards and Interpretations.....

Legislative and Regulatory Matters.....

Environmental Matters.....

Legal Proceedings.....

Risk Management Activities.....

Subsequent Events.....

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

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

Consolidated Statements of Operations.....

Consolidated Balance Sheets.....

Table of Contents

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

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

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

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

ITEM 9B. OTHER INFORMATION.....

PART III

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

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

ITEM 11. EXECUTIVE COMPENSATION.....

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

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

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

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

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

PART IV

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

SIGNATURES.....

EXHIBIT

INDEX.....

Table of Contents

## GLOSSARY OF COMMON ACRONYMS

Following are definitions of terms or acronyms frequently used in this Annual Report on Form 10-K for the fiscal year ended September 30, 2012 (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
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
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 Offer Rate
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	Nuclear Electric Insurance Limited
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation

NO<sub>x</sub>  
NPDES

Nitrogen oxides  
National Pollutant Discharge Elimination System

4

---



Table of Contents

NRC	Nuclear Regulatory Commission
NRP	Natural Resource Plan
NSPS	New Source Performance Standards
NSR	New Source Review
OCI	Other comprehensive income (loss)
PAL	Plant wide applicability limitation(s)
PM	Particulate matter
PSD	Prevention of Significant Deterioration
QTE	Qualified technological equipment and software
SACE	Southern Alliance for Clean Energy
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
VIE	Variable interest entity
XBRL	eXtensible Business Reporting Language
WCD	Waste Confidence Decision

Table of Contents

FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K ("Annual Report") contains forward-looking statements relating to future events and future performance. All statements other than those that are purely historical may be forward-looking statements. In certain cases, forward-looking statements can be identified by the use of words such as "may," "will," "should," "expect," "anticipate," "believe," "intend," "project," "plan," "predict," "assume," "forecast," "estimate," "objective," "probably," "likely," "potential," "speculate," 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 changed laws, regulations, and administrative orders, including those related to environmental matters, and the costs of complying with these new or changed laws, regulations, and administrative orders, as well as complying with existing laws, regulations, and administrative orders;
- 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");
- Events at a TVA nuclear 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 Bellefonte Nuclear Plant ("Bellefonte") Unit 1, 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;
- Settlements, natural resource damages, fines and 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 continued operation, performance, or failure of TVA's generation, transmission, flood control, and related assets, including coal combustion residual ("CCR") facilities;
- Modernizing aging coal-fired generating units and installing emission control equipment to meet existing and anticipated emissions reduction requirements, which could render continued operation of many of these 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 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, 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;
-

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

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;

- Rising 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;

Changes in the economy and volatility in financial markets;

Loss of quorum of the TVA Board of Directors;

Ineffectiveness of TVA's disclosure controls and procedures and its internal control over financial reporting;

Problems attracting and retaining a qualified workforce;

## Table of Contents

• Changes in technology;

• Failure of TVA's assets to operate as planned and the 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 (2012, 2011, 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 Quarterly 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).

Table of Contents

PART I

ITEM 1. BUSINESS

The Corporation

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 2012, the revenues generated from TVA's electricity sales were \$11.1 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. The TVA Board of Directors (the "TVA Board") also established a council under the Federal Advisory Council Act to advise TVA on its stewardship activities. TVA's stewardship responsibilities are conducted within the Tennessee watershed, whose boundaries are similar to, though not exactly the same as, the TVA service area. TVA's management of the Tennessee River, its tributaries, and certain shorelines is sometimes referred to as TVA's "stewardship" program in this Annual Report.

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 distributor customers of its power, a source of power supply outside the area for which TVA or its distributor customers 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.

Table of Contents

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

## Operating Revenues By State

For the years ended September 30

(in millions)

	2012	2011	2010
Alabama	\$1,556	\$1,699	\$1,495
Georgia	234	272	253
Kentucky	1,230	1,159	1,195
Mississippi	1,038	1,095	974
North Carolina	69	58	53
Tennessee	6,889	7,370	6,693
Virginia	49	60	48
Subtotal	11,065	11,713	10,711
Sale for resale and other	21	10	2
Subtotal	11,086	11,723	10,713
Other revenues	134	118	161
Operating revenues	\$11,220	\$11,841	\$10,874

## Note

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

## Customers

TVA is primarily a wholesaler of power. It sells power to distributor customers which then resell power to their customers at retail rates. TVA's distributor customers consist of (1) municipalities and other local government entities (referred to collectively below as "municipalities") and (2) customer-owned 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

Table of Contents

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)

	2012	2011	2010
Sales of electricity			
Municipalities and cooperatives	\$9,506	\$10,144	\$9,275
Industries directly served	1,442	1,440	1,321
Federal agencies and other	138	139	117
Total sales of electricity	11,086	11,723	10,713
Other revenues	134	118	161
Operating revenues	\$11,220	\$11,841	\$10,874

## Municipalities and Cooperatives

Revenues from distributor customers accounted for 85 percent of TVA's total operating revenues in 2012. At September 30, 2012, TVA had wholesale power contracts with 155 municipalities and cooperatives. Each of these contracts requires distributor customers to purchase from TVA all of their electric power and energy consumed within the TVA service area.

All distributor customers 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 distributor customers with the contract arrangements described above, the revenues derived from such arrangements in 2012, and the percentage of TVA's 2012 total operating revenues represented by these revenues are summarized in the table below.

## TVA Distributor Customer Contracts

At September 30, 2012

Contract Arrangements <sup>(1)</sup>	Number of Distributor Customers	Sales to Distributor Customers in 2012 (in millions)	Percentage of Total Operating Revenues in 2012	
15-year termination notice	5	\$105	0.9	%
10-year termination notice	47	3,152	28.1	%
5-year termination notice	103	6,249	55.7	%
Total	155	\$9,506	84.7	%

## Note

(1) Ordinarily the distributor customer and TVA have the same termination notice period; however, in contracts with six of the distributor customers 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 distributor customer until January 2018.



TVA's two largest distributor customers — 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 2012, sales to MLGW and NES accounted for nine percent and eight percent, respectively.

The power contracts between TVA and the distributor customers provide for purchase of power by the distributor customers at the wholesale rates established by the TVA Board. Under section 10 of the TVA Act, the TVA Board is authorized to regulate the municipal and cooperative distributors of TVA power to carry out the purposes of the TVA Act through contract terms and conditions as well as through rules and regulations. TVA regulates distributor customers primarily through the provisions of TVA's wholesale power contracts. All of the power contracts between TVA and the distributor customers 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 distributor customers are used only for electric system purposes. Furthermore, almost all of these contracts specify the specific resale rates and charges at which the distributor customers must resell TVA power to their customers. These rates are revised

## Table of Contents

from time to time, subject to TVA approval, to reflect changes in costs, including changes in the wholesale cost of power. The regulatory provisions in TVA's wholesale power contracts are designed to carry out the objectives of the TVA Act, including the objective of providing for an adequate supply of power at the lowest feasible rates. See Rates — Rate Methodology below.

### Other Customers

Revenues from directly served industrial customers accounted for 13 percent of TVA's total operating revenues in 2012. 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., is TVA's largest directly served industrial customer. Sales to USEC for its Paducah, Kentucky, facility represented five percent of TVA's total operating revenues in 2012. TVA's power supply commitments to USEC end on May 31, 2013.

### 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 and the level of competition, 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.

This methodology reflects the cause-and-effect relationship between TVA's costs and the corresponding rates TVA 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

Table of Contents

compared to the projected costs. Power rates are adjusted by the TVA Board to a level deemed by the TVA Board 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 distributor 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 distributor customers, the default wholesale rate structure is seasonal TOU. The wholesale rate provisions originally specified the SDE option would expire in September 2012. In April 2012, the TVA Board approved optional enhanced TOU and SDE structures which became effective in October 2012. TVA recently allowed distributors to elect one of these wholesale rate structures and make retail adjustments consistent with their wholesale elections. Distributor elections went into effect October 1, 2012 as follows: 142 chose the enhanced TOU structure, six chose the default seasonal TOU structure, and seven chose the enhanced SDE structure.

As noted above, TVA's rates also include a fuel cost recovery mechanism that automatically adjusts TVA's rates each month to recover TVA's 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. TVA sometimes refers to this separate fuel rate as the total fuel rate.

Additionally, TVA's rates include an adjustment to fund investment in equipment associated with TVA's clean air program. This adjustment was approved by the TVA Board in August 2003 and is scheduled to terminate in September 2013.

The TVA Board has not approved any 2013 rate adjustments. See Item 7, Management's Discussion of Financial Condition and Results of Operations — Key Initiatives and Challenges — Ratemaking.

Current Power Supply

General

Power generating facilities operated by TVA at September 30, 2012, included 29 conventional hydroelectric sites, one pumped-storage hydroelectric site (all units were out of service at September 30, 2012 but one unit returned to limited service on October 24, 2012), 11 coal-fired sites, three nuclear sites, 14 natural gas and/or oil-fired sites (with six units temporarily out of service), two diesel generator sites, 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 (out of service). TVA 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)

	2012		2011		2010		
Coal-fired	58,584	41	% 74,583	52	% 74,590	51	%
Nuclear	55,244	38	% 49,562	34	% 53,339	36	%

Edgar Filing: Tennessee Valley Authority - Form 10-K

Hydroelectric	12,817	9	%	12,706	9	%	14,013	9	%
Natural gas and/or oil-fired	16,650	12	%	6,809	5	%	5,475	4	%
Renewable resources (non-hydro)	25	(1) <1%		17	(1) <1%		4	(1) <1%	
Total	143,320	100	%	143,677	100	%	147,421	100	%

Note

(1) Operation and maintenance issues reduced the available renewable generation during 2012, 2011 and 2010 from several facilities, including those utilizing methane, solar, and wind.

Table of Contents

## Net Capability

The following table summarizes the summer net capability in megawatts ("MW") TVA had available at September 30, 2012:

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

At September 30, 2012

Source of Capability	Location	Number of Units	Summer Net Capability (MW)	Date First Unit Placed in Service	Date Last Unit Placed in Service
TVA-Operated Generating Facilities					
Coal-Fired					
Allen <sup>(2)</sup>	Tennessee	3	741	1959	1959
Bull Run	Tennessee	1	863	1967	1967
Colbert	Alabama	5	1,184	1955	1965
Cumberland	Tennessee	2	2,470	1973	1973
Gallatin	Tennessee	4	976	1956	1959
John Sevier <sup>(3)</sup>	Tennessee	4	704	1955	1957
Johnsonville <sup>(3)</sup>	Tennessee	8	924	1951	1959
Kingston	Tennessee	9	1,398	1954	1955
Paradise	Kentucky	3	2,201	1963	1970
Shawnee <sup>(3)</sup>	Kentucky	9	1,206	1953	1955
Widows Creek <sup>(3)</sup>	Alabama	2	938	1954	1965
Total Coal-Fired		50	13,605		
Nuclear					
Browns Ferry	Alabama	3	3,309	1974	1977
Sequoyah	Tennessee	2	2,278	1981	1982
Watts Bar	Tennessee	1	1,123	1996	1996
Total Nuclear		6	6,710		
Hydroelectric					
Conventional Plants					
	Alabama	36	1,190	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>(4)</sup>	Tennessee	4	1,616	1978	1979
Total Hydroelectric		113	5,447		
Natural Gas and/or Oil-Fired <sup>(5),(6)</sup>					
Simple-Cycle Combustion Turbine					
Allen <sup>(7)</sup>	Tennessee	20	456	1971	1972
Brownsville	Tennessee	4	468	1999	1999
Colbert	Alabama	8	392	1972	1972
Gallatin <sup>(8)</sup>	Tennessee	8	600	1975	2000
Gleason <sup>(9)</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

Edgar Filing: Tennessee Valley Authority - Form 10-K

Marshall County	Kentucky	8	621	2002	2002
Subtotal Simple-Cycle Combustion Turbine		87	5,388		
Combined-Cycle Combustion Turbine					
Caledonia	Mississippi	3	765	2003	2003
John Sevier <sup>(10)</sup>	Tennessee	1	870	2012	2012
Lagoon Creek <sup>(11)</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 Contents

Diesel Generator					
Meridian	Mississippi	5	9	1998	1998
Alberville	Alabama	4	4	2000	2000
Total Diesel Generators		9	13		
TVA Renewable Resources (non-hydro) <sup>(12)</sup>			< 1		
Total TVA-Operated Generating Facilities			35,017		
Contract Renewable Resources <sup>(13)</sup>			36		
Power Purchase and Other Agreements			2,272		
Total Summer Net Capability			37,325		

## Notes

- (1) Net capability is defined as the maximum generating output level a unit can sustain for a given time period with no equipment, operating, or regulatory restrictions less any plant electrical loads.
- (2) Eight MW of cofired methane is accounted for as coal-fired generation rather than being included in TVA Renewable Resources.
- (3) Includes only active units. See Current Power Supply — Coal-Fired for a discussion of TVA's plans for idling coal-fired units.
- (4) All four units at Raccoon Mountain were temporarily out of service at September 30, 2012. Unit 2 returned to limited service on October 24, 2012.
- (5) See Current Power Supply — Natural Gas and/or Oil-Fired for a discussion of TVA-operated natural gas and/or oil-fired facilities subject to leaseback and long-term lease arrangements.
- (6) Peak firing of simple-cycle combustion turbine units accounts for an additional 257 MW of short term capability.
- (7) The Allen Simple-Cycle Facility had four units (64 MW) out of service pending maintenance at September 30, 2012.
- (8) The Gallatin Simple-Cycle Facility had two units (144 MW) out of service pending maintenance at September 30, 2012.
- (9) The units at the Gleason Simple-Cycle Facility were derated to 360 MW as of September 30, 2012, pending maintenance.
- (10) John Sevier Combined-Cycle Facility is a single steam cycle driven by 3 gas turbines (3x1 configuration).
- (11) Lagoon Creek is a single steam cycle driven by 2 gas turbines (2x1 configuration).
- (12) TVA's three wind turbines (2 MW nameplate capacity) at its Buffalo Mountain site in Tennessee were not operational as of September 30, 2012. TVA will be conducting studies to determine options for these assets. TVA has 0.4 MW of solar installations at 16 sites.
- (13) Contract Renewable Resources include Generation Partners, Renewable Standard Offer, and 15 wind turbine generators located on Buffalo Mountain. See Current Power Supply — Purchased Power and Other Agreements for a discussion on additional renewable energy purchases.

## 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, 2012, TVA had 11 coal-fired plants consisting of 50 active units, accounting for 13,605 MW of summer net capability. As of September 30, 2012, TVA had nine 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 no retired units. 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, 2012, TVA had eight mothballed units: Shawnee Fossil Plant ("Shawnee") Unit 10, Johnsonville Fossil Plant ("Johnsonville") Unit 7, and Widows Creek Fossil Plant ("Widows Creek") Units 1-6. Inactive reserve is the state in which a unit is unavailable for service but can be brought back into service after some minor maintenance in a relatively short duration of time, typically measured in days. As of September 30, 2012, TVA had one unit in inactive reserve: Johnsonville Unit 8. 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. 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.

Table of Contents

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	· Retire Units 1 and 2 by 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 · Plans to idle Units 5-6 and Units 9-10 by September 30, 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

## Note

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

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

Fossil Plant	Total Units	Existing Scrubbers and SCRs	Requirements Under Environmental Agreements	Other Required Actions Taken or Planned to be Taken by TVA as a Result of Environmental Agreements
Allen	3	SCRs on all three units	Install scrubbers or retire no later than December 31, 2018	Had planned to add scrubbers on all three units but was re-evaluating its options as of September 30, 2012
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	· Still evaluating what actions to take with respect to all Colbert units
Cumberland	2	Scrubbers and SCRs on both units	Continuously operate current and any new emission control equipment	Continuously operate existing emission control equipment
Gallatin	4	None		

Edgar Filing: Tennessee Valley Authority - Form 10-K

			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	· 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	· Remove from service Units 3 and 4 by December 31, 2012 · Still evaluating what additional actions to take with respect to Units 3 and 4
Kingston	9	Scrubbers and SCRs on all nine units	Continuously operate current and any new emission control equipment	Continuously operate existing emission control equipment
Paradise	3	Scrubbers and SCRs on all three units	Upgrade scrubbers on Units 1 and 2 no later than December 31, 2012	Upgrade scrubbers on Units 1 and 2 by December 31, 2012
Shawnee	2	None	Control <sup>(1)</sup> , retire, or convert <sup>(2)</sup> Units 1 and 4 no later than December 31, 2017	· Still evaluating what actions to take with respect to Units 1 and 4
Widows Creek	2	Scrubbers and SCRs on Units 7 and 8	· Continuously operate current and any new emissions control equipment on Units 7 and 8	· Continuously operate current or equivalent emissions control equipment on Units 7 and 8

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.

Exclusive of the actions required under the Environmental Agreements TVA idled Shawnee Unit 10 in October 2010.

TVA's long-range plans will continue to attempt to balance the costs and benefits of significant investments at its remaining coal-fired plants without 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.

## Table of Contents

Transmission upgrades may be required to maintain reliability when some coal-fired units become inactive. TVA invested \$48 million in such upgrades between 2011 and 2012, and estimates future expenditures for transmission upgrades to accommodate inactive coal-fired units to be \$430 million for 2013 to 2016.

**Thermal Challenges Impacting Generation.** Generation at Gallatin Fossil Plant ("Gallatin") and Cumberland Fossil Plant ("Cumberland") was curtailed during the summer of 2012 because of high river temperatures and the need to comply with thermal permit limits. These plants are located on the Cumberland River, where summer stream flows have been reduced by the U.S. Army Corps of Engineers to support its remediation work on the Wolf Creek and Center Hill dams. Strategic operation of the affected waterways and TVA's increased reliance on generation from natural gas-fired units has helped TVA manage this challenge.

**Coal Combustion Residual Facilities.** As a result of the December 2008 ash spill at the Kingston Fossil Plant ("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 coal combustion residual ("CCR") facilities. The first phase of the evaluation, which is finished, involved a detailed inspection of all wet CCR facilities, detailed documentation reviews, and a determination of any immediate actions necessary to reduce risks. The second phase of the program, which is also complete, included geotechnical explorations, material testing, stability analyses, and studies. The study showed that none of TVA's other coal-fired plants showed the same set of 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. The third phase of the program, which is implementation of recommended actions, is ongoing. This phase includes 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. As a part of this effort, an ongoing dam oversight program has been undertaken, and TVA employees have received additional training in dam safety and monitoring.

TVA is planning to convert all of its wet CCR facilities to dry 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 2022. At September 30, 2012, \$428 million of costs had been incurred since the start of the work. 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.

TVA is studying the adequacy of CCR storage capacity at other coal-fired plants. If TVA determines 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.

## 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.

Edgar Filing: Tennessee Valley Authority - Form 10-K

TVA Nuclear Power  
At September 30, 2012

Nuclear Unit	Status	Nameplate Capacity (MW)	Net Capacity Factor for 2012	Date of Expiration of Operating License	Date of Expiration of Construction Permits
Sequoyah Unit 1	Operating	1,221	86.4	2020	—
Sequoyah Unit 2	Operating	1,221	97.0	2021	—
Browns Ferry Unit 1	Operating	1,150	97.0	2033	—
Browns Ferry Unit 2	Operating	1,190	97.5	2034	—
Browns Ferry Unit 3	Operating	1,190	80.0	2036	—
Watts Bar Unit 1	Operating	1,230	88.6	2035	—
Watts Bar Unit 2	Under construction	1,220	—	—	2013*

\* An extension request has been submitted to the NRC. See Nuclear Reactor Licensing below.

Nuclear Regulatory Commission Safety Improvements Orders. On March 9, 2012, the Nuclear Regulatory Commission ("NRC") issued three new safety orders stemming from lessons learned from the 2011 events at the Fukushima Daiichi Nuclear

Table of Contents

Power Plant ("Fukushima events") in Japan. The orders include the development of strategies for responding to an interruption of off-site power, the addition of more reliable instruments to measure water levels in cooling pools where spent nuclear fuel is stored, and the installation of more robust venting systems to prevent hydrogen buildup and explosions. The orders dealing with the loss of off-site power and monitoring spent fuel pools will apply to every nuclear reactor in the U.S. The order requiring more robust containment venting systems applies only to certain U.S. boiling water reactors, including TVA's Browns Ferry. These reactors are required to improve their containment venting systems to prevent over-pressurization, which occurred at Fukushima. Licensees have until December 2016 or until the second refueling outage after submittal of implementation plans (plans to be submitted in February 2013), whichever is earlier, to fully implement the requirements of these three orders. TVA's implementation of the requirements of the orders will vary from plant to plant due to the timing of the scheduled refueling outages at each plant. 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 requirements or the associated costs. However, these amounts could be significant.

Sequoyah License Renewal. On August 5, 2009, TVA notified the NRC of its intent to submit license renewal applications for both Sequoyah units in the third quarter of 2013. If approved, the licenses for both units would be extended by an additional 20 years to 2040 for Unit 1 and 2041 for Unit 2. In May 2011, TVA amended its schedule and notified the NRC of its intent to submit license renewal applications for both Sequoyah units in the second quarter of 2013. In June 2011, TVA issued a final Supplemental Environmental Impact Statement ("SEIS") that addressed the impacts of renewing Sequoyah's operating licenses. In August 2011, the TVA Board approved proceeding with the license renewal application development and submittal. 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 U.S. Court of Appeals for the District of Columbia Circuit which 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 Commission 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. Licensing reviews and proceedings may currently continue, but final licenses will not be issued until the NRC completes its reassessment 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 at 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 — Key Initiatives and Challenges — Generation Resources and Regulatory Compliance.

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 — Key Initiatives and Challenges 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 Renewable Energy Resources

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, 2012, these units accounted for 5,447 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 a majority of its conventional hydroelectric units and on its Raccoon Mountain Pumped-Storage Plant ("Raccoon Mountain"). At September 30, 2012, uprates to 54 conventional hydroelectric units had been completed. These uprates resulted in 420 MW of increased capacity, with an average efficiency gain of approximately five percent. There are 37 units remaining to be modernized for reliability and/or capacity increases.

Raccoon Mountain Pumped-Storage Plant. The four units at Raccoon Mountain were placed in service between 1978 and 1979. The units, with a net summer capability of 1,616 MW, are utilized to balance the transmission system as well as generate power.

Table of Contents

Inspections of the turbines in the four Raccoon Mountain units 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. All four units are expected to be returned to service with new rotors in the 2013 to 2014 timeframe with one unit returned to limited service with a partially restacked rotor on October 24, 2012.

**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 cofiring, and three wind turbines. At September 30, 2012, the wind turbines did not provide any summer net capability because they were not operational. TVA will be conducting studies in 2013 to determine options for these wind turbines. The digester gas cofiring capacity is accounted for as coal-fired generation summer net capability. The solar sites provide less than one MW of summer net capability. See Purchased Power and Other Agreements for more information on renewable energy purchases.

**Natural Gas and/or Oil-Fired**

At September 30, 2012, TVA operated 98 combustion turbine units, 87 of which were simple-cycle and 11 of which were combined-cycle. The 87 simple-cycle units provide a maximum of 5,388 MW of summer net capability. The 11 combined-cycle units provide a maximum of 3,854 MW of summer net capability. Eighty of the simple-cycle units and one combined-cycle unit are fueled by either natural gas or fuel oil. The remaining seven simple-cycle units as well as the 10 combined-cycle units 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.

TVA began commercial operations at the John Sevier Combined-Cycle Facility ("John Sevier CCF") in northeastern Tennessee in April 2012. The facility has a net summer capability of 870 MW. TVA entered into a lease financing arrangement in connection with the facility in January 2012. See Note 8.

**Diesel Generators**

TVA has two diesel generator plants consisting of nine units. At September 30, 2012, these facilities accounted for 13 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 2012, TVA acquired approximately 14 percent of the power that it purchased on the power spot market, two 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 84 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 2013 and 2032, and the most significant of these contracts are described below.

**Power Purchase Contracts (Excluding Wind Contracts)**

At September 30, 2012

Type of Facility	Location	Summer Net Capability (MW)	Contract Termination Date
Natural gas	Mississippi	690	2013
Lignite	Mississippi	440	2032



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

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. At September 30, 2012, there were eight suppliers, with a combined capacity of 918 MW, whose power is purchased by TVA under this law.

At September 30, 2012, TVA was a party to nine contracts with eight wind farms for the purchase of renewable wind energy. Energy is currently provided under seven of the nine 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 attain them in the future. The other six contracts provide TVA with an additional 850 MW (nameplate capacity) that include renewable attributes. These wind farms are located in Illinois, Kansas, and Iowa. The remaining two 20-year wind contracts will provide up to an additional 365 MW (nameplate capacity) of renewable energy from wind farms located in Illinois and Kansas. These wind farms are under construction with expected deliveries beginning in 2013. 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.

Table of Contents

## Renewable Wind Contracts

At September 30, 2012

Location of Wind Farm	Wind Farm Nameplate Capacity (in MW)	Date Delivery Began or Is Expected to Begin
Illinois	300 *	2010
Iowa	115	2010
Iowa	83	2012
Iowa	101	2012
Kansas	201	2012
Kansas	165	2013
Illinois	200	2012
Illinois	150	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 generation 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 a 4.5 MW solar farm in Haywood County, Tennessee.

Green Power Switch ("GPS") was launched in 2000 by TVA. It is a low-cost way for consumers to support renewable energy and helps to offset the cost to TVA for increased renewables installed through Generation Partners ("GP") and Green Power Providers ("GPP"). GPS supported roughly 101,000 MWh of renewable energy in 2012. To provide supply for the program, TVA has installed 16 solar sites and the first commercial wind farm in the Southeast, and the Allen Fossil Plant ("Allen") was modified to co-fire methane from a nearby wastewater treatment facility. In recent years, most GPS supply growth has come through GP sites.

In 2003, TVA developed a 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 79 installations to nearly 1,186 installations in operation providing more than 68 MW of solar, wind, and biomass generation. In addition, there were 659 projects that had been approved by TVA as of September 30, 2012, that are in various stages of construction. Those projects represent an additional 29 MW of renewable power. The GP pilot program ended on September 30, 2012, and was replaced with GPP, a long-term sustainable program that began October 1, 2012.

The Renewable Standard Offer ("RSO") program is a pilot program that began in October 2010. Under this program, TVA will accept up to 100 MW of renewable capacity. As of September 30, 2012, TVA had 99.48 MW of renewable capacity signed up under the program, including one biomass project, six methane projects, six solar projects, and one wind project. These projects range in size from 0.1 MW to 20 MW gross nameplate capacity.

The Solar Solution Initiative ("SSI") is a pilot program that began in February 2012 and provides incentive payments for mid-size solar projects in TVA's RSO program if the projects use local installers in the 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 Valley region, adding investment and jobs. Under this program, TVA will accept up to 10 MW in CY 2012. As of September 30, 2012, TVA had 2.74 MW signed up under the program.

Technology advancements, such as storage and smart grid, will be needed to address some of the operational issues associated with intermittent renewable energy sources. 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. 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.

Table of Contents

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

## Purchased Power\*

For the years ended September 30

	2012	2011	2010	
Millions of kWh	25,294	27,168	28,782	
Percent of TVA's Total Power Supply	15.0	% 15.9	% 16.3	%

## Note

\* Purchased power amounts include generation from Caledonia Combined-Cycle Gas Plant ("Caledonia"), which is currently a leased facility operated by TVA. Additionally, purchased power amounts include generation from Magnolia Combined-Cycle Gas Plant ("Magnolia") for 2010 and for a portion of 2011. On August 31, 2011, TVA acquired Magnolia.

## Future Power Supply

TVA has adopted a vision to lead the nation toward a cleaner energy future. 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) or renewable resources.

## Coal-Fired Generation

Consistent with its vision, TVA is planning to balance its coal-fired generation with lower-cost and cleaner-energy-generation technologies of the future. See Current Power Supply — Coal-Fired above.

## 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 permits expire in 2013 and an extension request has been submitted to the NRC.

Regulatory and licensing issues remain as primary risks for the project. The risks include compliance with the NRC requirements resulting from the Fukushima events; resolution of the NRC's Waste Confidence Decision relating to the potential environmental impacts of storage of spent fuel at each reactor site; and resolution of an aquatic contention in an ongoing contested licensing proceeding. 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.

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 Nuclear Plant Unit 2.

Bellefonte Units 1 and 2. The TVA Board's approval of the construction of the Bellefonte Nuclear Plant ("Bellefonte") Unit 1 project in August 2011 provided that construction of Bellefonte Unit 1 will not begin until after initial fuel loading at Watts Bar Unit 2. Bellefonte Unit 1 was expected to be completed in 2020 and to provide approximately 1,260 MW of summer net capability. As a result of lessons learned during the construction of Watts Bar Unit 2 and other factors, such as the Fukushima events, TVA is analyzing the Bellefonte Unit 1 cost and schedule.

It is expected that the cost of the project will increase and the completion date will change. In the event of significant changes TVA will seek action from the TVA Board. See Note 20 — Legal Proceedings — Case Regarding Bellefonte Nuclear Plant Units 1 and 2. The construction permits for Bellefonte Units 1 and 2 currently extend until 2020 and 2014, respectively. Bellefonte's construction permits are currently in deferred plant status. TVA will provide notice to the NRC at least four months in advance of activating construction. Asset-preservation and equipment-maintenance activities for Units 1 and 2 are continuing at the site, as well as Unit 1 engineering design work, detailed plant system physical reviews, and assessments. It is possible that the final licensing of this new unit could be impacted by the NRC suspension of final decisions on nuclear reactor licensing that began August 7, 2012.

Bellefonte Units 3 and 4. In October 2007, TVA submitted a combined construction and operating license application ("CCOLA") to the NRC for two new Advanced Passive 1000 reactors to be located at the Bellefonte site and designated as Bellefonte Units 3 and 4. TVA has requested that the NRC defer review of the Bellefonte Units 3 and 4 CCOLA indefinitely. It is possible that the final licensing of these new units could be impacted by the NRC suspension of final decisions on nuclear reactor licensing that began August 7, 2012. See Note 20 — Legal Proceedings — Administrative Proceedings Regarding Bellefonte Units 3 and 4.

Other Nuclear Initiatives. TVA signed a letter of intent to begin evaluating a site and perform studies for small modular reactor(s) ("SMR") at its Clinch River site in Oak Ridge, Tennessee. TVA notified the NRC in August 2010 that it intends to submit a construction permit application. The SMR would have a scalable, modular design allowing utilities to add electrical

## Table of Contents

generation capacity in increments of 180-360 MW. The SMR could be competitive with and able to be built more quickly than larger reactors on the market. The project includes design and development of up to four SMR units on the Clinch River site and submission of the construction permit application by the third quarter of 2014. It is possible that the final licensing of any new units could be impacted by the NRC suspension of final decisions on nuclear reactor licensing that began August 7, 2012.

**Extended Power Uprate.** TVA is undertaking an Extended Power Uprate ("EPU") project at Browns Ferry which 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.

### Natural Gas-Fired Generation

Part of TVA's strategy of portfolio diversification and reducing air emissions involves the addition of natural gas-fired plants to its generation fleet. TVA may also decide to make further strategic investments in natural gas-fired facilities in the future by purchase, construction, and/or lease. See Current Power Supply — Natural Gas and/or Oil-Fired.

### Hydroelectric Generation

Hydroelectric generation will continue to be an important part of TVA's energy mix. TVA, through its Hydro Modernization Program, continues to assess its conventional hydroelectric units for reliability and/or capacity increases through 2030. Annual hydroelectric generation is highly dependent on rainfall and runoff and can vary significantly from year to year.

### Future Wind Contracts

For a discussion of future wind contracts, see Current Power Supply — Purchased Power and Other Agreements.

### Power Purchases

Purchasing power will likely remain a component of how TVA addresses the power needs of its service area. TVA intends to balance production capabilities with power supply requirements by promoting the conservation and efficient use of electricity and, when necessary, entering into power purchase agreements.

### Energy Efficiency and Demand Response Programs

TVA, in partnership with its distributors and directly served customers, is developing a broad portfolio of energy efficiency and demand response programs designed to help reduce long-term energy supply costs in the TVA service area. An effective set of energy efficiency and demand response programs is consistent with TVA's vision to be one of the nation's leading providers of low-cost and cleaner energy by 2020 and its goal to become the regional leader in energy efficiency. TVA is currently working with its power distributors and directly served customers to build on the success of its program in 2011 and 2012. TVA realized 560 gigawatt hours ("GWh") and 559 GWh of energy efficiency savings in 2012 and 2011, respectively, and expects those savings to grow.



Table of Contents

## 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 for TVA-Operated Facilities\*

For the years ended September 30

(in millions)

	2012	2011	2010
Coal	\$1,824	\$2,315	\$2,126
Natural gas	527	265	236
Fuel oil	46	54	38
Nuclear fuel	319	261	277
Total fuel	\$2,716	\$2,895	\$2,677

## Note

\* Excludes effects of the fuel cost adjustment deferrals and amortization on fuel expense in the amounts of \$(36) million, \$31 million, and \$(585) million for the years ended September 30, 2012, 2011, and 2010, 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)

	2012	2011	2010
Coal	3.18	3.17	2.90
Natural gas and fuel oil	3.19	3.96	4.37
Nuclear	0.58	0.53	0.52
Average fuel cost per kWh net thermal generation from all sources	2.08	2.21	2.01

## 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 ("FTP") gains and losses to fuel expense whereas in 2011 all of the FTP gains and losses were allocated to purchased power expense.

TVA also has tolling agreements under which it obtains electricity from outside suppliers. Under these tolling agreements, TVA supplies the fuel to the outside supplier, and the outside supplier converts the fuel into electricity. The following table indicates the cost of fuel supplied by TVA under these agreements and also the average fuel expense per kWh for the years indicated:

Natural Gas Purchases for Tolling Plants<sup>(1)</sup>

For the years ended September 30

	2012	2011	2010
Cost of fuel (in millions)	\$255	\$343	\$381
Average fuel expense (cents/kWh)	3.79	5.40	5.93

## 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.

Coal

Coal consumption at TVA's coal-fired generating facilities during 2012 and 2011 were approximately 29 million tons and 36 million tons, respectively. At September 30, 2012, and 2011, TVA had 28 days and 29 days of system-wide coal supply at full burn rate, respectively, with net book values of \$402 million and \$404 million, respectively.

## Table of Contents

TVA utilizes both short-term and long-term (longer than one year) coal contracts. During 2012, long-term contracts made up 97 percent of coal purchases and short-term contracts accounted for the remaining three percent. TVA plans to continue using contracts of various lengths, terms, and coal quality to meet its expected consumption and inventory requirements. During 2012, TVA purchased coal by basin as follows:

- 43 percent from the Illinois Basin;
- 37 percent from the Powder River Basin in Wyoming;
- 19 percent from the Uinta Basin of Utah and Colorado; and
- 1 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 2012 due to lower than planned coal-fired generation. During 2012, seven percent of TVA's coal supply was delivered by rail, 20 percent was delivered by barge, and 59 percent was delivered by a combination of barge and rail. The remainder was delivered by truck.

### Natural Gas and Fuel Oil

During 2012, TVA purchased a significant amount of its natural gas requirements from a variety of suppliers under contracts with terms of one year or less but managed its exposure to spot market volatility through its FTP.

During 2012, TVA purchased substantially all of its fuel oil on the spot market, but managed its exposure to spot market volatility through its FTP. At September 30, 2012, and 2011, the net book value of TVA's natural gas in inventory was \$7 million and the net book value of TVA's fuel oil in inventory was \$99 million and \$77 million, respectively. At September 30, 2012, all but 17 of TVA's combustion turbine units were dual-fuel capable, and TVA has fuel oil stored on each site 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 (2013-2017) 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 is a supplier of enrichment services for uranium for fueling TVA's nuclear units through November 2014. USEC is, among others, a participant in a high assay tails (depleted uranium hexafluoride) enrichment program. This tails enrichment program may allow USEC to extend its enrichment operations through May 31, 2013. TVA has contracted to buy a substantial portion of the output of this program. Also in May 2012, TVA entered into an enriched product and uranium hexafluoride supply agreement with one of the participants to the tails enrichment program, Energy Northwest. Should USEC or another nuclear fuel supplier fail to provide enrichment services, TVA believes it has sufficient nuclear fuel inventory available to mitigate near-term supply risks, and also expects to be able to procure material at reasonable rates.

TVA, the U.S. Department of Energy ("DOE"), and certain nuclear fuel contractors have entered into agreements providing for surplus DOE highly enriched uranium (uranium that is too highly enriched for use in a nuclear power plant) to be blended with other uranium. The enriched uranium that results from this blending process, which is called blended low-enriched uranium ("BLEU"), is fabricated into fuel that can be used in a nuclear power plant. This blended nuclear fuel was first loaded in a Browns Ferry reactor in 2005 and is expected to continue to be used to

reload the Browns Ferry reactors through at least 2016. BLEU fuel was loaded into Sequoyah Unit 2 in CY 2008, CY 2009 and CY 2011.

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 to a degree 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, 2012, and 2011, the net book value of this nuclear fuel was \$1.2 billion and \$1.1 billion, respectively.

Mixed Oxide Nuclear Fuel. Under the DOE Surplus Plutonium Disposition ("SPD") Program, mixed oxide ("MOX") fuel would be fabricated with surplus plutonium and depleted uranium as a replacement for commercial uranium fuel. In February 2010, DOE and TVA entered into an interagency agreement to evaluate the potential use of mixed oxide fuel in reactors at Browns Ferry and Sequoyah. As part of the evaluation of MOX, TVA is participating as a cooperating agency. TVA could make a decision in 2013 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 in the 2018 timeframe. TVA's three criteria for implementing MOX are that it must be environmentally and operationally safe; it must be economical compared to other

## Table of Contents

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 has certain types of radwaste processed and shipped to a disposal facility in Clive, Utah. In June 2011, TVA entered into a six year contract to send shipments of radwaste to a new burial facility in Andrews, Texas. The first shipment occurred in September 2012. TVA also stores some radwaste at its own facilities and is capable of storing radwaste at its facilities for an extended period of time.

**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 in storage pools indefinitely had the DOE begun accepting spent nuclear fuel. 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 waste confidence findings and regulations 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 U.S. Court of Appeals for the District of Columbia 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. 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 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 received an aggregate of approximately \$70 million to offset on-site storage and dry cask construction costs through 2008. TVA entered into a settlement agreement with the United States in July 2011 that delineates recoverable and non-recoverable costs from the United States for the disposal of spent nuclear fuel and that sets forth a claim submittal and review process. In January 2012, TVA received \$37 million for 2009 and 2010 claims. TVA anticipates submitting additional claims to the DOE on an annual basis pursuant to the settlement agreement.

**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 a full fuel 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 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 64 interconnections with 12 neighboring electric systems, and delivered nearly 168 billion kWh of electricity to TVA customers in 2012. In carrying out its responsibility for grid reliability in the TVA service area, TVA has operated with 99.999 percent reliability over the last 13 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, the TVA transmission organization 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,

Table of Contents

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 standards containing over 1,200 requirements that must be met. TVA has assigned additional personnel and expanded programs to address these standards and requirements and ensure continued compliance. More stringent standards, including standards for transmission are presently under consideration, and 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 2012, TVA had 820, or 24 percent, fewer heating degree days and seven, or 0.3 percent, fewer cooling degree days than in 2011.

	2012	Percent Change	2011	Percent Change	2010
Combined degree days (normal 5,244)	4,714	(14.9)%	5,541	(8.2)%	6,036

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 2012 and 2011. Rainfall in the eastern region of the Tennessee Valley was 97 percent of normal for 2012 and 97 percent of normal in 2011. Also, runoff was 88 percent of normal in 2012 and 98 percent of normal in 2011. 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 decreased two percent in 2012 as compared to 2011, and decreased nine percent in 2011 as compared to 2010. Conventional hydroelectric generation was 92 percent of normal in 2012 and 94 percent of normal in 2011. See Item 1A, Risk Factors, for a discussion of the potential impact of weather on TVA.

## 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 distributors of 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 TVA 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 and electric transportation.

The near-term research focus for SMRs is to pursue design and licensing of a plant to be located in the TVA footprint. TVA is seeking DOE funding to share in these costs. Progress is being made towards beginning the environmental and geotechnical characterization of the plant site and actively seeking additional utility partner(s). TVA is continuing to evaluate other SMR technology design options.

TVA's grid modernization research goals are to advance the implementation of technology options identified from smart grid roadmaps for TVA's transmission system and local power company distribution systems. The focus is on developing and demonstrating technology options that help sustain reliability, lower costs, and mitigate risks for TVA and local power companies. 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.

## Table of Contents

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 demand response 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 demand response technologies for both the consumer and the utility. Additionally, TVA is conducting demonstrations to support the development of a business case and roadmap for electric vehicle infrastructure.

TVA also seeks to leverage research and development activities through partnerships with distributors of TVA power, the Electric Power Research Institute ("EPRI"), the DOE, Oak Ridge National Laboratory, other utilities, participation in professional societies such as the Institute of Electrical and Electronic Engineers and Conseil International des Grands Reseaux Electriques, universities, and industry vendors.

### 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 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 293,000 acres of reservoir lands for natural resource protection, recreation, and other purposes.

TVA's Natural Resource Plan ("NRP"), accepted in August 2011, is designed to enhance stewardship of public recreation facilities, water resources, wildlife and plants, and historic and cultural sites on TVA-managed reservoir lands by helping to guide TVA management to better meet public stewardship objectives while responding to the needs of the TVA region's communities and residents. Implementation of the NRP is expected to be staged over a 20-year period. The NRP is expected to be reviewed and updated at least 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 local power companies, 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 150 companies into the TVA service area during 2012. These companies announced capital investments of approximately \$5.9 billion and the expected creation and/or retention of over 48,000 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 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 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

## Table of Contents

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 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.

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.

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

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 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.

## Table of Contents

### 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 hazardous 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 such as air and water quality where Congress has given the states limited powers to regulate federal activities.

### Other Federal Entities

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

### Taxation and Tax Equivalents

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

### Environmental Matters

TVA's power generation activities, like those across the utility industry and in other industrial sectors, are subject to most federal, state, and local environmental laws and regulations. Major areas of regulation affecting TVA's activities include clean air, water quality control, and management and disposal of solid and hazardous wastes. In the future, regulations in all of these areas are expected to become more stringent and to apply to additional emissions and sources.

### Clean Air Regulations

The CAA establishes a comprehensive program to protect and improve the nation's air quality and control sources of air emissions. 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 minimum National Ambient Air Quality Standards ("NAAQS") for certain air emissions and the EPA has done this for ozone, particulate matter ("PM"), sulfur dioxide ("SO<sub>2</sub>"), and nitrogen dioxide ("NO<sub>2</sub>"). The CAA established two types of NAAQS: (1) primary standards, which set limits to protect public health, and (2) secondary standards, which set limits to protect public welfare. Most NAAQS require measurement over a defined period of time (typically one hour, eight hours, twenty-four hours, or one year) to determine the average concentration of the pollutant present in a defined geographic area.

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

When a NAAQS has been established, each state must recommend, and the EPA must designate, the areas within its boundaries that meet NAAQS ("attainment areas") and those that do not ("non-attainment areas"). Each state must develop a state implementation plan ("SIP") to bring non-attainment areas into compliance with NAAQS and maintain good air quality in attainment areas. Non-attainment designations can have serious repercussions by, among other things, causing states to impose stricter controls on industrial facilities, including TVA's power plants, and complicating the air permitting process for the construction, expansion, or modification of industrial facilities. If counties in which TVA facilities are located are designated as non-attainment for one or more types of emissions, TVA's expansion or modification plans could be affected, possibly resulting in increased costs or schedule delays. The NAAQS that affect or potentially affect TVA operations are summarized below.

**NAAQS for Ozone.** In March 2008, the EPA issued final rules adopting new, more stringent eight-hour NAAQS for ozone. The EPA lowered the primary standard from 84 parts per billion to 75 parts per billion and promulgated a new secondary standard that is the same as the primary standard. In the TVA service area Memphis and Knoxville and some adjacent areas have been designated as non-attainment areas under the new standard. States must submit to the EPA no later than CY 2014 plans that demonstrate attainment with the standard. Areas must reach attainment by deadlines that vary (CY 2016 to CY 2030) depending on the severity of the ozone problem.

In January 2010, the EPA published a proposed rule that would establish more stringent primary and

Table of Contents

secondary ozone NAAQS. The EPA announced that it planned to publish the final rule with the new ozone standards before the end of CY 2011. However, in September 2011, the EPA decided to reconsider the proposal. This effectively leaves the 75 parts per billion ozone standard in place until the required review in 2013. As the ozone standards become more stringent, utilities are expected to come under increasing pressure to further reduce nitrogen oxides ("NO<sub>x</sub>") emissions from their existing fossil plants.

NAAQS for Particulate Matter. The EPA has developed annual NAAQS for coarse particulate matter (defined as particles of 10 micrometers or larger) and both annual and 24-hour NAAQS for fine particulate matter (particles with a size of up to 2.5 micrometers). The EPA has stated they will not be changing the current standard for coarse particulate matter. In October 2009, the EPA issued non-attainment designations for areas not meeting the 24-hour NAAQS for fine particulate matter. In the TVA service area, some counties have been designated as non-attainment. TVA operates coal-fired power plants in Anderson and Roane Counties, which have been designated as non-attainment. TVA also operates a coal-fired plant in Jackson County, Alabama, and part of that county is designated non-attainment for the annual fine particulate standard. State and some local governments will be required to take steps to control fine particulate pollution affecting these non-attainment areas. Those steps may include stricter controls on industrial facilities, possibly including TVA's power plants, and additional planning requirements for transportation-related sources. States must submit their SIPs to the EPA within three years after the EPA makes final non-attainment area designations. Areas are required to attain the standard no later than five years after the effective date of the designations. The EPA may grant attainment date extensions for up to five additional years in areas with more severe fine particulate matter problems as well as in areas where emissions control measures are not available or feasible. The EPA is currently reconsidering the annual and 24-hour fine particulate standards, and if lowered as expected, it is likely that there will be additional non-attainment designations in the TVA service area. On February 14, 2012, several environmental organizations and states filed suit against the EPA alleging that the EPA failed to complete a five-year review of the PM NAAQS as required under the CAA. Pursuant to a court order, the EPA published in June 2012 a proposed rule in the Federal Register that proposes to revise the PM NAAQS to strengthen the annual primary fine particle standard and to establish a separate secondary fine particle standard. On August 31, 2012, the parties to the suit filed a consent decree that requires the EPA to sign a notice of final rulemaking for its final decisions concerning its review of the PM NAAQS no later than December 14, 2012.

NAAQS for SO<sub>2</sub>. In June 2010, the EPA established a new one-hour SO<sub>2</sub> NAAQS at 75 parts per billion and revoked the 24 hour and annual SO<sub>2</sub> NAAQS. The EPA expects to designate areas as attainment, non-attainment, or unclassifiable by June 2013 based on the existing monitoring network. The State of Tennessee has submitted three areas in the state to the EPA to be considered for non-attainment designations. These recommended designations are based on actual monitoring data from these areas. Non-attainment designations are expected to result in lower SO<sub>2</sub> emission limits for sources of SO<sub>2</sub> in or near these areas. The EPA expected to make attainment designations by 2015; however, the EPA is currently re-evaluating the monitoring versus modeling methodologies to be used in areas that currently do not have monitors. This re-evaluation may result in a longer time line for designations. Several areas in the TVA service area are expected to be designated non-attainment, and the new standard is expected to make permitting for some new and modified sources, including TVA sources, more difficult. SO<sub>2</sub> emission reductions from some existing TVA and industrial sources may be required.

NAAQS for NO<sub>2</sub>. In January 2010, the EPA established a new one-hour NAAQS for NO<sub>2</sub> at the level of 100 parts per billion. To determine compliance with the new standard, the EPA is establishing new ambient air monitoring requirements near major roads as well as in other locations where maximum concentrations are expected. Although existing air quality monitors do not currently show exceedances of this new standard in the TVA service area, additional community and roadside monitoring is expected to result in the designation of new non-attainment areas. The EPA intends to re-designate areas in CY 2016 or CY 2017, as appropriate, based on the air quality data from the new monitoring network. This new short-term standard could make permitting new and modified sources, including TVA sources, more difficult. Several areas in the TVA service area are expected to be designated

non-attainment. The EPA considers the TVA service areas as unclassifiable until the required monitoring is completed.

New Source Review. The NSR provisions of the CAA require persons constructing new major air emission sources or making major modifications to existing air pollution sources to obtain a permit prior to such construction or modifications. Major modifications are non-routine physical or operational changes that increase the emissions from an air emission source above specified thresholds. In order to proceed with a project, the facility must first obtain a permit which requires the identification and implementation of Best Available Control Technology ("BACT") for all regulated air pollutants emitted above the prescribed thresholds and an analysis of the ambient air quality impacts of the new construction or major modification. In 1999, the EPA announced plans to actively pursue NSR enforcement actions against electric utilities for making changes to their coal-fired power plants without obtaining an NSR permit. Under section 114 of the CAA, the EPA has the authority to request from any person who owns or operates an emission source information and records about operation, maintenance, and emissions as well as other data relating to such source for the purpose of developing regulatory programs, determining if a violation occurred (such as the failure to comply with NSR), or carrying out other statutory responsibilities. If violations are found to have occurred, the EPA or, possibly, other enforcement authorities could require the installation of new pollution control equipment and could impose fines and penalties. See Item 1, Business — Current Power Supply — Coal-Fired and Note 20 — Legal Proceedings — Environmental Agreements, — John Sevier Fossil Plant Clean Air Act Permit, — Shawnee Fossil Plant Clean Air Act Permit, and

Table of Contents

— Information Request from the EPA for a discussion of the Environmental Agreements into which TVA entered that resolve most issues concerning NSR. Possible claims for NSR violations involving increases in greenhouse gas ("GHG") and sulfuric acid mist from projects can 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, required by court order, was to replace the existing Clean Air Interstate Rule ("CAIR") effective January 1, 2012. CSAPR will 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. On October 6, 2011, the EPA proposed revisions to CSAPR which will allow slightly more ozone season NO<sub>x</sub> emissions in Mississippi, where TVA has purchased a combined-cycle natural gas plant. It also proposed to reduce the SO<sub>2</sub> and NO<sub>x</sub> allowances allocated to coal-fired plants in Alabama, Kentucky, and Tennessee to match the more stringent requirements of the Environmental Agreements for the years 2013, 2018, and 2019.

On August 21, 2012, the U.S. Court of Appeals for the District of Columbia Circuit ruled the EPA exceeded its statutory authority by requiring upwind states to reduce emissions by more than their significant contribution to downwind non-attainment states and by not allowing states adequate time to develop their own emission reduction programs. On October 5, 2012, the EPA filed a petition for rehearing en banc with the U.S. Court of Appeals for the District of Columbia Circuit, asking the court to rehear the case. In the interim, the CAIR remains in effect for TVA and other utilities, and the Environmental Agreements and CAIR SO<sub>2</sub> and NO<sub>x</sub> allowance allocations remain the air quality compliance drivers for TVA's coal-fired plants in conjunction with the electric utility hazardous air pollutant standard.

**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 CY 2014 for some of TVA's startup and auxiliary boilers. Most boilers will require scheduled maintenance to ensure optimized combustion, and a few may require the installation of controls. Concurrently with the issuance of the rule, the EPA announced reconsideration of several elements in the rule. Until the reconsideration process is completed, final specific requirements are too uncertain to predict. In May 2011, the EPA published a notice in the Federal Register delaying the effective dates of the boiler rule while it was in the process of reconsidering certain aspects of the rule. On January 9, 2012, the U.S. Court of Appeals for the District of Columbia Circuit issued a decision vacating and remanding the EPA delay notice. In February 2012, the EPA provided a "no action assurance" to the owners and/or operators of industrial boilers with respect to the notification deadlines in the boiler rule. Under the "no action assurance," the EPA will exercise its discretion not to pursue enforcement for violations of the notification deadlines until either December 31, 2012, or the effective date of a final rule addressing the proposed reconsideration, whichever occurs earlier. The EPA expects to issue final standards by the end of 2012 pending OMB final review.

**Mercury and Air Toxic Standards for Electric Utility Units.** Effective April 16, 2012, the EPA promulgated a final rule on 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 the April 2015-2016 timeframe. Boiler combustion systems require scheduled maintenance to ensure optimized combustion to minimize emissions of organic hazardous air pollutants. 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 final rule moderated somewhat from the proposed rule, but it remains the primary driver of additional air quality controls for TVA's coal-fired plants over the next few years. Legal challenges to this rule could affect the compliance dates.

**New Source Performance Standards for Fossil Fuel-Fired Electric Utility Generating Units.** On February 16, 2012, the EPA published revised New Source Performance Standards ("NSPS") for new and reconstructed coal and oil-fired



units for emissions of PM, SO<sub>2</sub> and NO<sub>x</sub>. This rule in the conjunction with Mercury and Air Toxic Standards for new sources will impose stringent limits on any new or reconstructed fossil fuel-fired steam generating units.

**The Environmental Agreements.** The Environmental Agreements became effective in June 2011. These Agreements settled several outstanding legal challenges. In the agreements, TVA committed to (1) retire 18 coal-fired units by the end of 2017, (2) control, convert, or retire an additional 16 coal-fired units through June 20, 2019, (3) comply with annual, declining emission caps for SO<sub>2</sub> and NO<sub>x</sub>, (4) invest \$290 million in certain TVA environmental projects, (5) provide \$60 million split between Alabama, Kentucky, North Carolina, and Tennessee to fund environmental projects, and (6) pay civil penalties of \$10 million. See Note 20 — Legal Proceedings — Environmental Agreements.

**Multi-Pollutant Legislation.** The U.S. Congress has expressed interest in prior years in adopting multi-pollutant control legislation focused on the electric power sector. Among other things, such an approach could seek to establish coordinated caps for power plant emissions of mercury, SO<sub>2</sub>, NO<sub>x</sub>, and, in some cases, carbon dioxide ("CO<sub>2</sub>"). TVA cannot predict whether multi-pollutant legislation will ultimately become law. The legislative and regulatory landscape is continuing to change for these and other issues, and the outcome cannot be predicted accurately at this time.

**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. By CY 2000, the program established a nationwide cap on power plant SO<sub>2</sub> emissions of 8.9 million tons per year. The program also contains requirements for power plants to reduce NO<sub>x</sub> emissions through the use of available

## Table of Contents

combustion controls. The EPA's CAIR and CSAPR programs are more stringent in the Tennessee Valley region than the Acid Rain Program legislation established by Congress. Therefore, TVA forecasts that the Acid Rain Program will have no impact on TVA other than administrative reporting.

**Regional Haze Program.** In June 2005, the EPA issued the Clean Air Visibility Rule, amending its CY 1999 regional haze rule, which had established time lines for states to improve visibility in national parks and wilderness areas throughout the United States. Under the amended rule, certain types of older sources may be 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. TVA does not anticipate that this program has the potential to impact any unit other than Colbert Fossil Plant ("Colbert") Unit 5.

**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 state opacity requirements is coming under increased scrutiny, especially compliance during periods of startup, shutdown, and malfunction. SIPs developed under the CAA typically exclude periods of startup, shutdowns, and malfunctions. The EPA recently reversed its previous approval of Alabama's SIP for opacity, and this has been challenged in court.

## Climate Change

**Legislation.** Although it is unlikely that climate change legislation will pass during the 112th Congress, Congress may consider climate change and energy-related proposals. It is not unreasonable to anticipate that new EPA regulations or laws may set limits on GHG emissions for the electric utility sector. Prospects for future proposals becoming law, and the resulting potential impact on electric rates, are not clear at this time. However, if GHG emission reductions from electricity generating facilities become mandatory, the costs and impacts are expected to be significant, especially for coal-fired plants.

**Regulation.** In April 2007, the U.S. Supreme Court issued a decision in *Massachusetts v. EPA* holding that GHG emissions, including CO<sub>2</sub>, are "air pollutants" under the CAA and requiring the EPA to determine whether GHGs from new motor vehicles pose a threat to health and welfare. On December 15, 2009, the EPA published its finding under the CAA that six identified GHGs contribute to air pollution that may endanger public health or welfare, which triggered the statutory requirement that the EPA regulate emissions of GHGs from motor vehicles. As of January 2011, the CAA permitting programs for stationary sources must now also address GHGs.

**PSD/Title V Permitting Programs.** In May 2010, the EPA issued a final rule to establish applicability thresholds that trigger reviews under the Prevention of Significant Deterioration ("PSD") and Title V permitting programs for GHG emissions from major stationary sources. The threshold levels established by this rule, known as the Tailoring Rule, include both a mass-based calculation and a metric known as the carbon dioxide equivalent ("CO<sub>2</sub>e"), which incorporates the global warming potential for each of the six individual gases identified in the endangerment finding. This final rule "tailors" the requirements of these CAA permitting programs to designate which facilities will be required to obtain PSD and Title V permits. Under the Tailoring Rule, the EPA will phase in the CAA permitting requirements for emissions of GHG from stationary sources in at least three phases, the first two of which are relevant to large GHG sources such as TVA's coal-fired generation facilities.

The first phase of the Tailoring Rule became effective in January 2011, and applies only to sources that were already subject to PSD and/or Title V programs because of their emission levels of other regulated pollutants. Under the first phase, a source will be subject to PSD requirements for GHGs if (1) the source is already subject to PSD requirements

for another pollutant and (2) the source increases its GHG emissions by at least 75,000 tons per year on a CO<sub>2</sub>e basis. Those sources may be required to conduct a BACT review for their GHG emissions. The EPA has issued guidance on the technologies or operations that would constitute BACT for GHGs. Pending the commercial demonstration of technologies such as carbon capture and sequestration, it is expected that the use of energy efficiency measures will constitute BACT. Additionally, under the first phase, any source that was required to have a Title V permit for a non-GHG pollutant is required to address GHG requirements, including monitoring, record keeping, and reporting requirements, when it applies for, renews, or revises its Title V permit.

The second phase of the Tailoring Rule became effective in July 2011, and, unlike the first phase, was not limited to sources that are already subject to PSD and/or Title V programs. Under the second phase, the EPA has established different thresholds for construction and modification activities. Construction of a major source will become subject to PSD requirements for GHGs if the construction results in an increase in GHG emissions of at least 100,000 tons per year on a CO<sub>2</sub>e basis. The modification of an existing major source will become subject to PSD requirements for GHGs if the modification results in an increase in GHG emissions of at least 75,000 tons per year on a CO<sub>2</sub>e basis. Additionally, under the second phase, sources that emit GHGs in an amount equal to at least 100,000 tons per year on a CO<sub>2</sub>e basis will be required to obtain a Title V permit if they do not have one already.

On June 26, 2012, the U.S. Court of Appeals for the District of Columbia Circuit denied or dismissed challenges to the Tailoring Rule and other EPA rules relating to the regulation of GHGs under the CAA. On August 10, 2012, petitioners filed a

Table of Contents

petition for a panel rehearing or for a rehearing en banc. TVA cannot predict the outcome of this litigation.

**New Source Performance Standards for Greenhouse Gas Emissions.** On July 3, 2012, the EPA determined that it is not appropriate to apply PSD and Title V permitting requirements to additional, smaller sources of GHG emissions and issued a final rule that retains the GHG permitting thresholds that were established in phase 1 and 2 of the GHG Tailoring Rule. The rule also finalized an approach to assist state and local permitting authorities in streamlining the administration of PSD permits for GHGs. This action will improve the usefulness of plant wide applicability limitations ("PALs") for GHG emissions by allowing GHG PALs to be established on a CO<sub>2</sub>e basis in addition to the already available mass-basis. A PAL is an emissions limit applied source-wide in which a source can make changes to the facility without triggering PSD permitting requirements, as long as emissions do not increase above the limit established by the PAL. The EPA also revised its regulations to allow a source that emits or has the potential to emit GHGs at levels above 100,000 tons per year CO<sub>2</sub>e but that have emissions of other regulated pollutants at minor source levels to apply for a GHG PAL while still maintaining its minor source status.

In December 2010, the EPA entered into a settlement agreement with various states and environmental groups that establishes a schedule for setting new standards for regulating GHG emissions from oil and coal-fired electric generating units. On March 27, 2012, the EPA proposed a NSPS of 1,000 pounds of CO<sub>2</sub> per megawatt-hour for new coal, natural gas combined-cycle or integrated gasification combined-cycle electric utility generating units larger than 25 MW. The original deadline for the final GHG NSPS rule was May 26, 2012. However, the EPA issued only proposed regulations for new sources and stated it will not propose rules for existing sources at this time. TVA is following the proposed new source regulations. Given the uncertainty of the regulations on existing sources and the status of the EPA's settlement negotiations, TVA is not able to anticipate the effect on existing units at TVA at this time. The impact of the proposed rule to TVA is expected to be minimal as TVA included new units that would meet this standard in its Integrated Resource Plan accepted by the TVA Board in 2011.

**Biomass CO<sub>2</sub> Emissions.** In July 2011, the EPA's final rule that determined that GHG emissions from biomass combustion will not be counted toward emission thresholds for PSD and Title V permitting under the second phase of the EPA's Tailoring Rule for a period of three years became effective. During this three-year interim period, the EPA will examine how to evaluate CO<sub>2</sub> emissions from biomass. The EPA released a companion document that provides guidance for the determination of BACT in PSD proceedings involving biogenic CO<sub>2</sub> emissions from bioenergy facilities.

**GHG Emission Reporting.** In October 2009, the EPA published the final rule for mandatory monitoring and annual reporting of GHG emissions from various categories of facilities, including fossil fuel suppliers, industrial gas suppliers, direct GHG emitters (such as electric generating facilities), and manufacturers of heavy-duty and off-road vehicles and engines. This rule does not require controls or limits on emissions, but requires data collection which began January 2010 and is due annually on March 31 for each calendar year. The requirements for monitoring, reporting, and record keeping with respect to GHG emissions from existing units has not had a material impact on TVA.

**Executive Orders.** In October 2009, President Obama signed Executive Order ("EO") 13514, which requires federal agencies to establish GHG emission reduction targets and prepare inventories of GHG emissions including emissions of CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbon gases, and sulfur hexafluoride. The White House Council on Environmental Quality ("CEQ") released final Federal Greenhouse Gas Accounting and Reporting Guidance in October 2010, which is the basis for these inventories. TVA submitted its first Strategic Sustainability Performance Plan to OMB in June 2010 and updated it per the Executive Order.

On February 29, 2012, the CEQ issued additional formal guidance to federal agencies to complete the final climate change vulnerability analysis and Climate Change Adaptation Plan for 2013 as required by its March 2011

**Implementing Instructions.** Pursuant to EO 13514, TVA incorporated climate change-related considerations into its existing planning processes, including the development of measurable goals and performance metrics to guide adaptation efforts and assess whether efforts are achieving desired outcomes. TVA completed all 2012 EO 13514 requirements.

**International Accords.** The Kyoto Protocol was adopted in 1997 by the United Nations to address global climate change by reducing emissions of CO<sub>2</sub> and other GHGs. Although the United States has not adopted the Kyoto Protocol, the United States pledged to reduce its GHG emission in the range of 17 percent below CY 2005 levels by CY 2020 in connection with the 15<sup>th</sup> Conference of the Parties to the United Nations Framework Convention on Climate Change ("UNFCC"). In December 2011, decisions made by the 17<sup>th</sup> Conference of the Parties included a promise to work toward a new global treaty by 2015 that will apply to all 195 UNFCC parties, effective starting in 2020. An act of the U.S. Congress is required to make UNFCC reductions enforceable. TVA is unable to predict whether any such climate-related legislation requiring such reductions in GHG emissions ultimately will become law.

**Litigation.** In addition to legislative activity, climate change issues are the subject of a number of lawsuits, including lawsuits against TVA. See Note 20 — Legal Proceedings — Case Arising out of Hurricane Katrina and — Global Warming Cases, Southern District of New York.

**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

Table of Contents

impacts to business reputation and public opinion. See Future Power Supply.

**Physical Impacts of Climate Change.** The United States Global Change Research Program has concluded, in its report entitled 2009 Global Climate Change Impacts in the U.S., that warming of the climate is unequivocal and that the warming observed over the past 50 years is due primarily to human-induced emissions of GHGs. Climate change creates physical and financial risk. Physical risks from climate change may include an increase in sea level and changes in weather conditions, such as changes in precipitation and extreme weather events. TVA does not serve any coastal communities, so the possibility of sea level rise does not directly affect TVA or its customers. Changes in weather conditions, primarily temperature and humidity, will vary TVA's customers' energy needs. Energy use may increase or decrease depending on the duration and magnitude of the changes, having a positive or negative effect on TVA revenues. To the extent climate change impacts the economic health of the TVA service area, it will also impact TVA's revenues as TVA's financial performance is tied to the regional economies it serves.

In November 2009, EPRI published a report entitled Potential Impacts of Climate Change on Natural Resources in the Tennessee Valley Authority Region (the "EPRI Report"). TVA co-sponsored this report, with the objective of providing preliminary information on climate change impacts across the TVA service area. The EPRI Report was based on data from the Fourth Assessment Report of the Interagency Panel on Climate Change published in CY 2007. Subject to substantial uncertainties, the EPRI Report predicted that future (2020-2100) precipitation in the TVA service area will increase approximately three percent during the winter and will be unchanged over the summer in the eastern portion of the TVA service area, but will decline six to seven percent over the western portion of TVA's service area. In addition, extreme weather events such as droughts and floods are also expected to become more frequent, although their frequency is difficult to quantify. The EPRI Report also predicted that temperatures could increase across the TVA service area by approximately one degree Celsius by 2020, two degrees Celsius by 2050, and three to four degrees Celsius by 2100.

If realized, projected changes in precipitation and increasing temperatures could impact future TVA management of water resources in the Tennessee Valley in the following ways:

**Power generation.** Power generation depends on having sufficient water flow available for hydroelectric generation. Hydroelectric generation will depend on the precipitation runoff within each reservoir drainage basin and the upstream flow into each reservoir. Power generation also depends on having water available for cooling fossil and nuclear power plants. Cooling water is withdrawn and then returned to the source. Increasing water temperatures would require withdrawing more water to achieve the same amount of cooling at fossil and nuclear power plants, increasing the cooling capacities of plants, or reducing power generation to match the available water supply. See Water Quality Control Developments.

**Agricultural, municipal, and industrial uses.** Agricultural, municipal, and industrial water uses are driven by temperature and extreme weather. Warmer temperatures and drought will increase water demand for these purposes.

**Navigation.** Commercial navigation relies on maintaining the minimum channel depth as well as reasonable flow rates. Increasingly frequent extreme weather events (drought episodes and flooding) may create more challenges to maintaining the entire length of a commercial navigation channel.

**Aquatic life.** Water quality impacts the aquatic life dependent on the river system. Changes in water flow due to the increasing frequency of extreme weather events may impact the habitats and biodiversity of the Tennessee River system.

As changes in future precipitation and temperature develop, the current river management system employed by TVA may require periodic re-evaluations to balance the competing water use interests across the Tennessee Valley.

Actions Taken by TVA to Reduce GHG Emissions. TVA has taken significant voluntary steps to reduce GHG emissions, including the following:

As discussed earlier in this Item 1, Business, TVA has increased its nuclear capacity, modernized its hydroelectric program, increased its purchases of renewable resources, and helped reduce demand for electricity through its energy efficiency initiatives.

In 2011, TVA began planting carbon sequestration test plots near Watts Bar Dam in Rhea County, Tennessee. The test plots are designed to demonstrate the beneficial use of different types of vegetation in the terrestrial sequestration of CO<sub>2</sub>. While TVA has a long history of tree planting and reforestation efforts, this project is the first time TVA is planting trees to generate offsets from CO<sub>2</sub> sequestration. The project funding to evaluate growing biomass as a sustainable energy crop and investigate how terrestrial CO<sub>2</sub> sequestration, wildlife habitat, and land protection can be integrated with environmental stewardship is currently on hold.

Under the Environmental Agreements, TVA agreed to significantly reduce its reliance on coal-fired generation in the future. See Current Power Supply — Coal-Fired for a discussion of the Environmental Agreements and TVA's plans with respect to coal-fired generation.

## Table of Contents

TVA's CQ Emissions. In 2012, TVA produced about 74 million tons of CO<sub>2</sub>. Historically, TVA has produced about 100 million tons of CO<sub>2</sub> per year. TVA produced less CO<sub>2</sub> in 2012 because of a decrease in coal-fired generation.

### 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 distributor customers located in that state. TVA's policy is to provide compliance assistance to any distributor of TVA power, and TVA is providing assistance to the four distributors that sell TVA power in North Carolina. In addition, eight states have voluntary goals for renewable generation.

The U.S. Congress has not passed a national renewable energy standard ("RES"). Further, it is unlikely Congress will adopt a law in the near future that will require TVA to acquire a certain percentage of electric generation from a specified list of eligible renewable energy technologies.

Since a national RES is not expected to pass, Sen. Jeff Bingaman, D-N.M. introduced the Clean Energy Standard of 2012. The Clean Energy Standard Act of 2012 ("CES") (1) sets a national goal of producing 84 percent of U.S. large utility power from clean energy sources by 2035 and (2) employs a market-based approach that encourages investment in a wide variety of electricity technologies. It is unlikely that the CES will be enacted.

### Water Quality Control Developments

In April 2011, the EPA proposed a new rule under §316(b) of the Clean Water Act designed to minimize the impacts to fish and shellfish from the design and operation of cooling water intake structures at existing power plants and manufacturing facilities. The proposed rule contains new requirements for reducing the mortality of aquatic organisms trapped against the surface of water intake screens or drawn through the screens into plant cooling water systems. Compliance with the rule is expected to require changes in the operation of cooling water intakes and modifications to their design. These changes could potentially result in significant increases in capital costs and operating and maintenance costs. All of the intakes at TVA's existing coal and nuclear generating facilities are likely to be subject to the new rule. Compliance is anticipated to be required within eight years of the effective date of the final rule. Because of the uncertainty of the final rule changes to be made by the EPA, the future compliance costs are uncertain at this time. The EPA has recently committed to finalizing the new rule by June 27, 2013.

The EPA and many states are taking increased interest in potential effects of hydrothermal discharges. TVA is working with states and the EPA to demonstrate that the data collected in the vicinity of TVA plants is sufficient to assess the impacts of thermal discharges on the aquatic environment and validate existing thermal limits. TVA expects to collect substantially more in-stream biological and temperature data than in the past to justify current thermal limits. Specific data requirements in the future will be determined based on negotiations between TVA and regulators.

Water temperature issues at TVA's Cumberland continue to be complicated by reduced flows in the Cumberland River due to ongoing repairs at Wolf Creek and Center Hill dams initiated by the U.S. Army Corps of Engineers in CY 2007. The greatly reduced flows, combined with thermal discharges at Cumberland, have resulted in increased stress to aquatic organisms and have contributed to a portion of Barkley Reservoir being initially included on the State of Tennessee's CY 2008 list of impaired waters. The lower river flows are expected to continue to impact TVA's ability to operate Cumberland at normal rates, which may result in increased spending for power purchases. TVA continues to work with the U.S. Army Corps of Engineers and TDEC to alleviate aquatic impacts in the Barkley Reservoir and to improve the conditions in the reservoir.



The effluent guidelines required by the Clean Water Act for the Steam Electric Power Generating Category were last revised by the EPA in CY 1982. The EPA is currently conducting studies and surveys of wastewater discharges from the industry. Under a revised consent decree approved by the U.S. Court of Appeals for the District of Columbia Circuit, the EPA has agreed to sign a notice of proposed rulemaking by December 14, 2012, and to sign a decision taking final action by May 22, 2014. A future rule is expected to focus on wastewaters from ash handling and clean air control systems. The revised effluent guidelines are likely to require more restrictive discharge limitations through more advanced wastewater treatment, resulting in significant additional expenditures to meet the new requirements. In the interim, TVA is unable to predict whether state regulators may impose more stringent limits on a case-by-case basis under existing authority to exercise best professional judgment as National Pollutant Discharge Elimination System ("NPDES") permits are renewed.

#### Cleanup of Solid and Hazardous Wastes

Liability for releases and cleanup of hazardous substances is primarily regulated 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.

Non-TVA Sites. TVA is aware of alleged hazardous-substance releases at certain non-TVA areas for which it may have

Table of Contents

some liability. Although there is little or no known evidence that TVA contributed any significant quantity of hazardous substances to most of the non-TVA areas, there is evidence that TVA sent some materials to Ward Transformer, a non-TVA site, in Raleigh, North Carolina. The Ward Transformer site is contaminated by PCBs from electrical equipment. There is documentation showing that TVA sent a limited amount of electrical equipment containing PCBs to the site in CY 1974. A working group of potentially responsible parties (the "PRP Work Group") is cleaning up on-site contamination in accordance with an agreement with the EPA. The cleanup effort has been divided into four areas: two phases of soil cleanup; cleanup of off-site contamination in the downstream drainage basin; and supplemental groundwater remediation. The cost estimate for the first phase of soil cleanup is approximately \$55 million. The cost estimate for the second phase of soil cleanup is \$10 million. Estimates for cleanup of off-site contamination in the downstream drainage basin range from \$6 million to \$25 million. There are no reliable estimates for the supplemental groundwater remediation phase. In April 2009, the PRP Work Group filed an amended complaint in federal court against potentially responsible parties who had not yet settled, including TVA, regarding the two phases of soil cleanup. TVA settled this lawsuit and its potential liability for the two phases of soil cleanup for \$300 thousand and has been dismissed as a party. Although the settlement with respect to the first two phases does not prohibit TVA from having liability in connection with the other two phases or any natural resource damages, the U.S. Department of Justice is attempting to negotiate a government-wide settlement of the liability of all federal agencies (including TVA) for cleanup of offsite contamination in the downstream drainage basin and the investigative portion of the supplemental groundwater remediation. TVA believes that its liability for the remaining two phases and natural resource damages is less than \$1 million.

TVA operations at some TVA facilities have resulted in oil spills and other contamination that TVA is addressing. At September 30, 2012, 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 \$11 million and is included in Accounts payable and accrued liabilities and Other long-term liabilities on the Balance Sheet.

Coal Combustion Wastes

In May 2010, the EPA released the text of a proposed rule describing two possible regulatory options it is considering under the Resource Conservation and Recovery Act ("RCRA") for the disposal of coal combustion wastes ("CCWs") generated from the combustion of coal by electric utilities and independent power producers. 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. CCWs include fly ash, bottom ash, boiler slag, and flue gas desulfurization materials. If these materials are beneficially reused, they are referred to as coal combustion products ("CCP"). If these materials are destined for disposal, they are referred to as CCRs.

Under the first proposed regulatory option, the EPA would list CCRs destined for disposal in landfills or surface impoundments as "special wastes" subject to regulation under Subtitle C of RCRA. Subtitle C regulations set forth the EPA's hazardous waste regulatory program, which regulates management and disposal of wastes. The proposed rule would create a new category of waste so that CCRs would be subject to many of the Subtitle C regulatory requirements. Under this option, coal ash would be subject to technical requirements from the point of generation to final disposal. Transporters and treatment, storage, and disposal facilities would be subject to federal requirements and permits. The EPA is considering imposing disposal facility requirements such as liners, groundwater monitoring, fugitive dust controls, financial assurance, corrective action, closure of units, and post-closure care. This first option also proposes requirements for dam safety and stability for surface impoundments, land disposal restrictions, treatment standards for coal ash, and a prohibition on the disposal of treated CCRs below the natural water table. This first option would not apply to certain beneficial reuses of CCWs.

Under the second proposed regulatory option, the EPA would regulate the disposal of CCRs under Subtitle D of RCRA, the regulatory program for non-hazardous solid wastes. Under this option, the EPA is considering issuing

national minimum criteria to ensure the safe disposal of CCRs, which would subject disposal units to location standards, composite liner requirements, groundwater monitoring, corrective action standards for releases, closure and post-closure care requirements, and requirements to address the stability of surface impoundments. This second option would not regulate the storage or treatment of CCRs prior to disposal, and no federal permits would be required.

The proposed rule also states that the EPA is considering listing CCRs as a hazardous substance under CERCLA, and includes proposals for alternative methods to adjust the statutory reportable quantity for CCRs. The extension of CERCLA to CCRs could significantly increase TVA's liability for cleanup of past and future CCR disposal.

The EPA has not announced which regulatory approach it will take with respect to the management and disposal of CCWs. 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.

After the Kingston ash spill, the EPA initiated a national effort to assess the management of CCRs that are managed in surface impoundments and similar management units. The EPA has used technical consultants to evaluate all impoundments that meet the National Inventory of Dams standards as "high" or "significant". Using data provided by TVA, the EPA has issued draft review reports and ratings of "satisfactory", "fair", or "poor" for each TVA facility. TVA responded to the EPA on October 19, 2012, using an evaluation by an external consulting firm of the same impoundments. The EPA's draft report originally had five

## Table of Contents

impoundments rated as “poor” and the report from the external consulting firm only had one “poor” rating. The EPA has up to 45 days to review and issue final reports. TVA then has 30 days to develop action plans. The EPA will post the reports, TVA’s responses, and TVA’s Agency Response Plan on their website.

### Kingston Ash Spill

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

### Environmental Investments

From 1977 to 2012, TVA spent approximately \$5.4 billion on controls to reduce emissions from its coal-fired power plants. In addition, TVA has reduced emissions by retiring or idling coal 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 three units at Allen and four units at Gallatin subject to completing appropriate environmental reviews. In August 2012, the TVA Board canceled the scrubber projects at Allen, and TVA is currently re-evaluating its options for this plant.

**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.

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

Primarily on account of the actions described above, emissions of NO<sub>x</sub> and SO<sub>2</sub> on the TVA system have been reduced by 88 percent below peak 1995 levels and by 91 percent below 1977 levels, respectively. These controls also have provided a co-benefit of reducing hazardous air pollutants, including mercury, at some units.

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.

These evolving and emerging environmental developments are expected to confirm TVA's decision to move its generation system to a more balanced portfolio that relies more heavily on cleaner energy resources. TVA now is actively discussing and studying:

• Additional capital expenditures to address future clean air, water quality, and waste management requirements,

• Adding more renewable, gas, or nuclear generation,

•

Conversion of existing coal-fired units to natural gas,

Idling or retiring more coal-fired units, and

Transmission upgrades in part to help address plant/unit retirements.

TVA now anticipates spending approximately \$2.3 billion through 2018 to add controls to its coal-fired units, which is less than the previous projection of \$3.4 billion. This results from increasing reliance on cleaner energy resources and the idling/retirement of more coal-fired units which otherwise would have had to have been controlled. Also, the EPA's final mercury and air toxic standards were less restrictive than predicted. However, the addition of cleaner energy resources to the TVA system and the transmission upgrades that are necessary to accommodate unit idling/retirements have their own costs. TVA has added five gas-fired combined-cycle generating facilities to its fleet since 2007. These facilities provide cleaner capacity than other fossil fuel-fired options and help replace the capacity of idled or retired coal-fired units. Additional combined-cycle generating facilities may be added to TVA's fleet in the future as needed. See Current Power Supply — Natural Gas and/or Oil-Fired for more information.

Table of Contents

In addition to the costs described above, TVA is planning to invest between \$1.5 billion and \$2.0 billion to convert wet CCR facilities to dry storage facilities. The dry storage facilities are currently projected to be completed by 2022. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Generation Resources.

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

At September 30, 2012

(in millions)

	Estimated Timetable	Total Estimated Expenditures
Site environmental remediation costs <sup>(1)</sup>	2013+	\$ 11
Coal combustion residuals <sup>(2)</sup>	2013-2022	1,400
Proposed clean air control projects <sup>(3)</sup>	2013-2018	2,278
Clean Water Act requirements <sup>(4)</sup>	2013-2020	1,224

Notes

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

(2) Includes closure of impoundments, construction of lined landfills, and construction of dewatering systems.

(3) 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.

(4) Compliance plans to meet the requirements of a revised or new implementing rule under Section 316(b) of the Clean Water Act and the EPA's revised steam electric effluent guidelines will be determined upon finalization of the rules.

Employees

On September 30, 2012, TVA had 12,762 employees, of whom 4,673 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 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.

Table of Contents

TVA may lose its protected service territory.

TVA's service area is defined by the fence and protected by the anti-cherry-picking provision. 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, incur increased 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.

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

TVA's ability to access or control its funds can, in certain circumstances, be restricted by other federal entities. 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.

Alternatively, 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 restrictions on TVA's ability to control or allocate funds could cause adverse impacts to its cash flow, results of

Table of Contents

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 if, among other things, there are delays or changes in the final remediation schedule or plan. Also, certain costs that are currently either not probable or reasonably estimable are not included in this estimate, such as natural resource damages, 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, 2012, TVA's qualified pension plan had assets of \$7.0 billion compared to liabilities of \$11.9 billion. The qualified plan is mature with nearly 23,000 retirees 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.

Table of Contents

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, 2012, TVA had \$24.1 billion of Bonds outstanding (not including noncash items of foreign currency exchange loss of \$41 million and net discount on sale of Bonds of \$61 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.

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, solar events, droughts, floods, tornadoes, wars, national emergencies, terrorist activities, pandemics, and other similar destructive events. Examples of such events include, but are not limited to, the effect of the Fukushima events, the April 2011 storms in TVA's service area, and the August 2011 earthquake in the eastern United States. 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 lead to adverse impacts on TVA.

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. In addition, 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. 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.

Table of Contents

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 options for completing 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 schedule delays and overruns in the cost of labor and materials. In addition, if TVA does not obtain the necessary regulatory approvals, 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 predominately the sole power provider for its customers within its service area, and if demand for power in TVA's service area increases, TVA is contractually obligated to take steps to meet this increased demand.

If demand for power in TVA's service area increases, TVA may need to meet this increased demand by purchasing additional power from other sources, building new generation and transmission facilities, or purchasing existing generation and transmission facilities. Purchasing power from external sources, as well as acquiring or building new generation and transmission facilities, 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 TVA's ability to meet electricity demand, cash flows, results of operations, and financial condition, as well as the way TVA conducts its business.

Failure to meet TVA's energy efficiency and demand reduction goals may negatively impact TVA's cash flows, results of operations, and financial condition.

TVA's energy efficiency and demand reduction initiatives are important components of TVA's plan to meet future power needs in its service territory. It is possible, however, that results from these programs may be less favorable than TVA anticipates. If TVA fails to meet its energy efficiency and demand reduction goals, TVA may, among other things, need to purchase additional power from third parties or build or purchase additional generation facilities.

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. TVA resumed construction of Watts Bar Unit 2, which TVA anticipates will be placed in service in CY 2015. TVA is considering resuming construction on Bellefonte Unit 1 shortly thereafter. Risks associated with these units include the following:

**Nuclear Risks.** A nuclear incident at a TVA facility 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 \$105 million per year and a total of \$705 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.

**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

Table of Contents

contributions to the trust if, among other things:

• The value of the investments in the trust 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 could be required to voluntarily shut one or more units down 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. See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations — Key Initiatives and Challenges — Regulatory Compliance.

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 may 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 required 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 have been operating since the 1950s or earlier and have been in nearly constant service since they were completed. Other assets are being operated more often, or for more prolonged periods, than originally intended. If these 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, TVA, among other things:

♣May have to invest a significant amount of resources to repair or replace the assets or the supporting infrastructure;

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

♣May have to operate less economical sources of power;

Table of Contents

- May have to purchase replacement power on the open market at prices greater than TVA's 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 a nuclear incident. 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.

Cyber attacks could impact the ability of TVA's information technology and traditional operational assets to operate as planned which could adversely affect financial results. TVA faces potential cyber attacks against its respective 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 respective facilities in the most efficient manner. TVA's operations are extensively computerized, and a failure of TVA's information technology or operational technology assets may significantly disrupt operations.

In the ordinary course of business, TVA collects and retains sensitive information including personal identification information about customers and employees and other confidential information. All technology systems, no matter how robust, are potentially vulnerable to impacts, failures, or unauthorized access due to human error or physical or cyber attacks. 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.

Additionally, because of TVA's status as a governmental corporation and its role as predominately the sole power provider for its service territory, TVA may be targeted by individuals, groups, or nation states for cyber attacks. Any of these situations could negatively affect TVA's cash flows, results of operations, and financial condition, as well as pose potential health and safety risks.

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, a failure of its organizational transformation efforts, acts or omissions of TVA management, or a significant dispute with a TVA distributor-customer. Any deterioration in TVA's reputation may harm TVA's relationships with its distributor-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.

Table of Contents

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 non-TVA assets 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 its customers 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 or reduced service reliability, TVA's cash flows, results of operations, financial condition, and reputation may be negatively affected.

TVA's determination of its 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.

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 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 large portions 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 TVA facilities rely. Events at these non-TVA managed 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 was 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.

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. If Congress adjourns prior to confirming at least one additional board member, the TVA Board will have only four members and will not have a quorum. The TVA Board is responsible for, among other things, establishing the rates TVA charges for power as well as the long-term objectives, policies, and plans of TVA. 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.

Table of Contents

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 Bellefonte Unit 1, and successfully implement its organizational transformation efforts. The extension of the salary freeze for federal employees may aggravate this issue.

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 its 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 its short-term investments, decrease the value of the investments in TVA's pension fund and trusts, 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.

TVA's costs of using derivatives to hedge certain risks may increase. Depending on how regulatory agencies interpret and implement the provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act, TVA will be subject to recordkeeping and reporting requirements, 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, cause TVA to change its operations, increase the risks to which TVA is exposed, and negatively affect TVA's cash flows.

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 alternate 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

Table of Contents

that TVA, unlike many utilities, relies almost entirely on debt capital since TVA is not authorized to issue equity securities.

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

TVA's current credit ratings are not based solely on its underlying business or financial condition but are based to a large extent on the legislation that defines TVA's business structure. Key characteristics of TVA's business defined by legislation include (1) the TVA Board's ratemaking authority, (2) the current competitive environment, which is defined by the fence and the anti-cherry-picking provision, and (3) TVA's status as a corporate agency and instrumentality of the United States. 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 access to funds held in United States Treasury accounts could be limited or denied.

• 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.

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

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



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

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

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

## Table of Contents

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's securities might be limited.

Although many of TVA's 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, 2012, TVA-operated generating assets consisted of 50 active coal-fired units and nine idled coal-fired units, six nuclear units, 109 conventional hydroelectric units, four pumped-storage units (all out of service at September 30, 2012 but one unit returning to limited service at October 24, 2012), 11 combined-cycle units, 87 simple-cycle units (with six units out of service), nine 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 — Current 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. At September 30, 2012, 24 of the simple-cycle combustion turbine units and one of the combined-cycle combustion turbine units were leased to private entities and leased back to TVA under long-term leases (TVA is leasing the three Caledonia combined-cycle units under a long-term lease). In addition, since April 17, 2009, Seven States Southaven, LLC ("SSSL") has owned an undivided 90 percent interest in the three Southaven combined-cycle units, and TVA has entered into a lease with SSSL under which TVA leases SSSL's undivided 90 percent interest in the facility and operates the entire facility through April 23, 2013. For additional details, see Note 13. TVA is also in the process of constructing additional generating assets. For a discussion of these assets, see Item 1, Business — Future Power Supply.

### Transmission Properties

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

- Approximately 16,000 circuit miles of transmission lines (primarily 500 kilovolt and 161 kilovolt lines);
- 508 transmission substations, power switchyards, and switching stations; and
- 1,240 customer connection points (customer, generation, and interconnection).

At September 30, 2012, 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:

47

---

## Table of Contents

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

Additionally, TVA manages over 200 agreements for commercial recreation (such as campgrounds and marinas, etc).

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 purchased the Monteagle Place facility, which is part of the Chattanooga Office Complex, in September 2012. TVA also has a significant number of buildings in Muscle Shoals, Alabama, and is currently evaluating strategies to further reduce its Muscle Shoals portfolio.

### 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.

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.

48

---

Table of Contents

PART II

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

Not applicable.

49

---

Table of Contents

## ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data for the years 2008 through 2012 should be read in conjunction with the audited financial statements and notes thereto (collectively, the "Financial Statements") presented in Item 8, Financial Statements and Supplementary Data. Certain reclassifications have been made to the 2008, 2009, and 2010 financial statement presentation to conform to the 2011 and 2012 presentation.

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

For the years ended, or at, September 30

(dollars in millions)

	2012	2011	2010	2009	2008
Sales (millions of kWh)	165,255	167,730	173,662	163,804	176,304
Peak load (MW)	31,098	31,434	31,778	32,572	32,027
Operating revenues	\$11,220	\$11,841	\$10,874	\$11,255	\$10,382
Fuel expense	\$2,680	\$2,926	\$2,092	\$3,114	\$2,756
Purchased power expense	\$1,189	\$1,427	\$1,127	\$1,631	\$1,420
Operating and maintenance expense	\$3,510	\$3,617	\$3,232	\$2,395	\$2,307
Net interest expense	\$1,273	\$1,305	\$1,294	\$1,272	\$1,376
Net income	\$60	\$162	\$972	\$726	\$817
Construction expenditures	\$2,119	\$2,417	\$2,015	\$1,793	\$1,984
Total assets	\$47,334	\$46,393	\$42,753	\$40,017	\$37,137
Financial obligations					
Long-term debt, net <sup>(3)</sup>					
Long-term power bonds, net	\$20,269	\$22,412	\$22,389	\$21,788	\$20,404
Long-term debt of variable interest entities	\$981	\$—	\$—	\$—	\$—
Total long-term debt, net	\$21,250	\$22,412	\$22,389	\$21,788	\$20,404
Current debt, net <sup>(3)</sup>					
Short-term debt, net	\$1,507	\$482	\$27	\$844	\$185
Current maturities of power bonds	\$2,308	\$1,537	\$1,008	\$8	\$2,030
Current maturities of long-term debt of variable interest entities	\$13	\$—	\$—	\$—	\$—
Total short-term debt, net	\$3,828	\$2,019	\$1,035	\$852	\$2,215
Total debt <sup>(3)</sup>	\$25,078	\$24,431	\$23,424	\$22,640	\$22,619
Capital leases <sup>(4)</sup>	\$35	\$5	\$47	\$77	\$95

Edgar Filing: Tennessee Valley Authority - Form 10-K

Leaseback obligations	\$1,203	\$1,282	\$1,353	\$1,403	\$1,353
Energy prepayment obligations	\$612	\$717	\$822	\$927	\$1,033

Notes

(1) See Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations for a description of special items in 2012, 2011, and 2010 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 and Note 12 — Debt Outstanding.

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



Table of Contents

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

(Dollars in millions except where noted)

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help the reader understand the Tennessee Valley Authority ("TVA"), its operations and its present business environment. 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 report. This MD&A includes the following sections:

• **TVA's Business and Vision** - a general description of its business, its objective, its strategic priorities, and its core capabilities;

• **Executive Overview** - a general overview of activities and effects on operations for 2012;

• **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; off-balance sheet arrangements and aggregate contractual obligations; and overview of financial position;

• **Key Initiatives and Challenges** - a discussion of current and future challenges facing TVA;

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

• **Other Matters** - a discussion of governance and certain risks facing TVA.

TVA's Business and Vision

Business

TVA operates the nation's largest public power system. At September 30, 2012, TVA provided electricity to approximately 50 large industrial customers, six federal agency customers, and 155 distributor customers 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 2012 revenues from the sale of electricity totaled \$11.1 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.

The area in which TVA sells power is limited by the Tennessee Valley Authority Act of 1933, as amended, 16 U.S.C. §§ 831-831ee (as amended, the "TVA Act") under a provision known as the "fence"; however, another provision of federal law known as the "anti-cherry-picking" provision generally protects TVA from being forced to provide access to its transmission lines to others for the purpose of delivering power to customers within substantially all of TVA's defined service area.

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.

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<sup>4</sup> 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.

#### TVA's Renewed Vision

While TVA's mission has not changed since it was established in 1933, the environment in which TVA does business continues to evolve. Facing challenging economic conditions, tougher new environmental standards, an aging generating fleet, and changing customer needs, TVA has recognized a need to refine its strategic vision for the future.

Table of Contents

TVA's renewed vision is to be one of the nation's leading providers of low-cost and cleaner energy by 2020. More specifically, 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.

The three priorities of TVA's renewed vision define a path forward for TVA's energy future in which every TVA initiative and the functions of every TVA employee will be linked to at least one of six focus areas:

Low rates

High reliability

Responsibility

Cleaner air

Greater energy efficiency

More nuclear generation

In 2011, the TVA Board accepted the Integrated Resource Plan ("IRP"), which recommends a strategic direction focusing on a diverse mix of electricity generation sources, including nuclear power, renewable energy, and natural gas, as well as traditional coal and hydroelectric power. TVA is increasing its low or no emission generation. TVA considers fuel mix in making decisions about generation, and is expected to rely on nuclear, natural gas-fired capacity, and energy efficiency as the primary means to meet future electricity needs.

In support of its renewed vision of more generation with low or no emissions, TVA has invested \$5.4 billion since 1977 to reduce emissions of sulfur dioxide and nitrogen oxide at its coal-fired plants. These emissions have been reduced approximately 90 percent from their peak levels. During 2012, TVA completed construction of the John Sevier Combined-Cycle Facility ("John Sevier CCF"), a natural-gas fired plant located in northeastern Tennessee. John Sevier CCF began commercial operations on April 30, 2012. See Item 1, Business — Current Power Supply.

Linking the Vision to Performance

During 2012, TVA set measures and evaluated its operational performance by focusing on three key indicators. The first measure was the variance of net cash flow to plan. Net cash flow is defined as cash flow from operations plus net cash flow used in investing activities less net cash flow from change in the fuel cost adjustment deferral account. The other two measures were nuclear equivalent availability factor and fossil seasonal equivalent forced outage rate, which measure the availability of TVA's generation units within the nuclear and fossil-fueled fleets. The 2012 results compared with targets for these key indicators are reflected in the following chart.

Corporate Measure	Target	Stretch	Actual
Net cash flow compared to plan	\$0 Million	\$200 Million	\$1.1 Billion
Nuclear equivalent availability factor	90.1%	92.2%	93.0%
Fossil seasonal equivalent forced outage rate	6.8%	5.1%	2.9%

TVA exceeded its target for net cash flow by \$899 million primarily due to lower than expected expenditures resulting from savings initiatives discussed in the Executive Overview section below.

TVA also exceeded its operating goals for nuclear equivalent availability factor and fossil seasonal equivalent forced outage rate. While nuclear outages ran seven days higher than planned, nuclear operations experienced fewer forced outage days and was able to increase output by over 10 percent versus 2011 generation. The fossil seasonal forced outage rate, which measures generating assets availability for the fossil fuel-fired generation units, was at a historical low in 2012. Assets were available when needed and took outages in periods where TVA could purchase in the market at lower prices.

Net cash flow is not a measure of financial performance under accounting principles generally accepted in the United States of America ("GAAP"). Accordingly, it should not be considered as a substitute for cash flow data prepared in accordance

Table of Contents

with GAAP. However, TVA uses net cash flow as an indicator of TVA's ability to meet its debt service obligations and the availability of funds for capacity expansion and other business requirements.

The following reconciles the net cash flow to net cash provided by operating activities.

## Non-GAAP Reconciliation

For the year ended September 30, 2012

Net cash flow provided by operating activities	\$2,574	
Plus: Net cash flow used in investing activities	(2,513	)
Less: Net cash flow from change in fuel cost adjustment deferral	(61	)
Planned cash flow	\$(977	)
Net cash flow	\$1,099	

## Executive Overview

Weather was the primary driver affecting TVA's results of operations for the year ended September 30, 2012, as compared with the same period of 2011. TVA had net income for the year ended September 30, 2012 of \$60 million as compared with net income of \$162 million for the same period of 2011.

The southeastern United States experienced one of the warmest winters on record in 2012, which contributed to a six percent decrease in sales of electricity for the first two quarters of 2012 as compared with the same period of the prior year. Although sales of electricity increased during the last two quarters of 2012, as compared with the same period of 2011, the increase was not large enough to fully offset the impact of lower sales and revenue in the first two quarters of 2012. TVA anticipates continuing slow growth for 2013 due to the sluggish economic recovery and, to a lesser extent, the effects of energy efficiency initiatives by individuals and companies.

Planned operating revenues for 2012 were \$12.1 billion, including the estimated impact of fuel cost recovery. Total operating revenues were seven percent below the planned amount. In response to overall lower sales and revenues, TVA undertook cost savings initiatives beginning in the second quarter of 2012. Actions initiated include reductions in discretionary spending, deferred program spending, and identification of productivity enhancements to improve the overall cost effectiveness of existing programs and projects. In addition, TVA eliminated certain layers of management and reduced contractor and consultant services.

TVA experienced some short-term challenges with respect to its electricity generation during 2012. See Key Initiatives and Challenges — Generation Resources. Over the long-term, TVA faces challenges related to, among other things, compliance with current and emergent environmental laws and regulations, which may include installation of clean air equipment on coal-fired units and replacement of generating capacity of idled coal-fired units with nuclear and natural gas-fired units. Meeting these challenges will require significant capital expenditures on TVA's part. TVA is constrained by the TVA Act, which allows TVA to issue Bonds in an amount not to exceed \$30.0 billion outstanding at any one time. Without a legislative solution, this limitation may require TVA to seek alternative financing arrangements. See Liquidity and Capital Resources — Sources of Liquidity and Key Initiatives and Challenges.

Table of Contents

## Results of Operations

## Sales of Electricity

Sales of electricity accounted for virtually all of TVA's operating revenues in 2012, 2011, and 2010. TVA sells power at wholesale rates to distributor customers, consisting of municipalities and cooperatives 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 unusual loads. In addition, power that exceeds the needs of the TVA system is sold under exchange power arrangements with other power systems.

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

## Sales of Electricity

For the years ended September 30  
(millions of kWh)

	2012	Percent Change	2011	Percent Change	2010
Municipalities and cooperatives	131,885	(3.8 )%	137,042	(3.1 )%	141,448
Industries directly served	30,446	6.6 %	28,563	(5.1 )%	30,099
Federal agencies and other	2,924	37.6 %	2,125	0.5 %	2,115
Total sales of electricity	165,255	(1.5 )%	167,730	(3.4 )%	173,662

Weather affects both demand and market prices for 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.

## 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	3,381	1.1 %	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 )%

## 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.

## 2012 Compared to 2011

Sales of electricity decreased 2.5 billion kilowatt hours ("kWh") for the year ended September 30, 2012, compared to the year ended September 30, 2011, primarily due to a decrease in demand by municipalities and cooperatives. 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 1.1 percent above normal during 2011. The customers of municipalities and cooperatives 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 municipalities and cooperatives 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.

2011 Compared to 2010

Sales of electricity decreased 5.9 billion kWh for the year ended September 30, 2011, as compared to the year ended September 30, 2010, primarily due to a decrease in demand by municipalities and cooperatives. The 4.4 billion kWh decrease in sales to municipalities and cooperatives was primarily due to a 7.6 percent decrease in heating degree days and a 9.2 percent decrease in cooling degree days as a result of a warmer winter and cooler summer in 2011 compared to 2010. Heating degree days were 1.1 percent above normal during 2011, compared to 9.4 percent above normal during 2010. Cooling degree days were 14.0 percent above normal for 2011, compared to 25.5 percent above normal for 2010. Decreased demand by directly served industrial customers, primarily by TVA's largest directly served industrial customer, accounted for the remaining 1.5 billion kWh decrease in total sales of electricity.

Table of Contents

## Financial Results

The following table compares operating results for 2012, 2011 and 2010:

## Summary Consolidated Statements of Operations

	2012	2011	2010
Operating revenues	\$11,220	\$11,841	\$10,874
Operating expenses	9,920	10,404	8,632
Operating income	1,300	1,437	2,242
Other income, net	33	30	24
Net interest expense	1,273	1,305	1,294
Net income (loss)	\$60	\$162	\$972

Operating Revenues. Operating revenues for 2012, 2011 and 2010 consisted of the following:

Operating Revenues	2012	Percent Change	2011	Percent Change	2010
Sales of electricity					
Municipalities and cooperatives	\$9,506	(6.3 )%	\$10,144	9.4 %	\$9,275
Industries directly served	1,442	0.1 %	1,440	9.0 %	1,321
Federal agencies and other	138	(0.7 )%	139	18.8 %	117
Total sales of electricity	11,086	(5.4 )%	11,723	9.4 %	10,713
Other revenue	134	13.6 %	118	(26.7 )%	161
Total operating revenues	\$11,220	(5.2 )%	\$11,841	8.9 %	\$10,874

In April 2011, TVA implemented a revised wholesale rate structure. The rate structure provides price signals intended to encourage distributor 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 average 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.

A summary of changes in revenue components consisted of the following:

	Variance 2012 vs. 2011	Variance 2011 vs. 2010
Fuel cost recovery	\$(355	) \$1,211
Base revenue	(294	) (210
Other	28	(34
Total	\$(621	) \$967

## 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

55

---

Table of Contents

Expenses below for further discussion of the change in fuel expense.

## 2011 Compared to 2010

Operating revenues increased \$967 million for the year ended September 30, 2011, compared to the year ended September 30, 2010. The change was primarily due to a \$1.2 billion increase in fuel cost recovery. Partially offsetting this increase was a \$210 million decrease in base revenue and a \$34 million decrease in other revenue sources. Of the increase in fuel cost recovery, \$1.3 billion was due to the unusually low fuel rate in 2010, which resulted from the liquidation of the fuel cost adjustment liability. This fuel cost adjustment liability was the product of over collection of fuel costs in 2009 through the fuel cost adjustment formula. Prior to October 2009, the fuel cost adjustment formula was updated quarterly resulting in the potential for larger positive and negative swings. Starting in 2010, the TVA Board revised the operation of this formula so that it was updated monthly and the TVA Board also approved the liquidation of the remaining liability through rates charged to rate payers over the nine-month period from October 1, 2009 to June 30, 2010, thereby decreasing the fuel rate charged to customers for that period. If not for this decrease to the fuel rate, 2010 revenues would have been \$822 million higher. The increase in fuel cost recovery was partially offset by a \$100 million decrease due to lower sales of electricity. Lower demand as a result of milder weather conditions was the primary driver of the \$210 million decrease in base revenues and accounted for \$259 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. The majority of the operating expenses associated with Fuel expense and Purchased power expense are recovered through the fuel cost recovery mechanism while all other operating costs, including certain non-eligible fuel costs ("Non-eligible Fuel Costs"), are recovered through base rates. (References to Fuel expense and Purchased power expense recovered by the fuel cost recovery mechanism do not refer to the recovery of the Non-eligible Fuel Costs, which are recovered in base rates.) The fuel cost recovery mechanism adjustment provides a means to adjust rates monthly in order to reflect changing fuel and purchased power costs, including realized gains and losses relating to fuel commodity hedging transactions under TVA's Financial Trading Program ("FTP"). See Note 14 — Derivatives Not Receiving Hedge Accounting Treatment — Derivatives Under 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 due to the operation of the fuel cost recovery mechanism adjustment. This difference is recorded as a regulatory asset or liability and represents over-collected revenues (regulatory liabilities) or under-collected revenues (regulatory assets). As a result of this treatment, fuel expenses are matched to the related revenues. Non-eligible Fuel Costs for 2012, 2011, and 2010 were \$333 million, \$426 million, and \$355 million, respectively.

Operating expenses for 2012, 2011 and 2010 consisted of the following:

## Operating Expenses

For the years ended September 30

	2012	Percent Change	2011	Percent Change	2010
Fuel	\$2,680	(8.4	)% \$2,926	39.9	% \$2,092
Purchased power	1,189	(16.7	)% 1,427	26.6	% 1,127
Operating and maintenance	3,510	(3.0	)% 3,617	11.9	% 3,232
Depreciation and amortization	1,919	8.3	% 1,772	2.8	% 1,724
Tax equivalents	622	(6.0	)% 662	44.9	% 457
Total operating expenses	\$9,920	(4.7	)% \$10,404	20.5	% \$8,632

## 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 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,

Table of Contents

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 services 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 the year include 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. 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.

2011 Compared to 2010

The \$834 million increase in fuel expense was driven by several factors including the mix of generation resources and effects of prior year fuel cost adjustments. Of the increase in fuel expense in 2011 over 2010, \$219 million resulted from reduced nuclear generation as a result of extended refueling outages and the April 27, 2011 storms, which caused Browns Ferry Nuclear Plant ("Browns Ferry") to go offline for nearly a month; reduced hydroelectric generation due to lower precipitation levels during 2011 than 2010; and the replacement of lower-cost generation from Paradise Fossil Plant and Cumberland Fossil Plant ("Cumberland") due to outages with generation from plants which burn higher-cost natural gas or higher-cost coal. Another driver behind TVA's increased fuel costs resulted from an increase in the average fuel cost for coal-fired generation. See Item 1, Business — Fuel Supply.

The remaining \$615 million increase in fuel cost was driven by the fuel cost adjustment. In 2009, TVA over collected fuel costs through the fuel cost adjustment. The over collection of fuel costs was recorded as a regulatory liability with a corresponding increase in 2009 fuel expense. TVA "returned" the over collection during 2010 by lowering the fuel cost adjustment, the effect of which was to reduce revenue. As the refunds were made, the regulatory liability was reduced by a corresponding reduction in fuel expense. See Results of Operations — Financial Results — Operating Revenues — 2011 Compared to 2010 above.

Purchased power expense also increased \$300 million in 2011 from 2010 primarily because of the accounting for the fuel cost adjustment, described above. The fuel cost adjustment accounted for \$340 million of the increase. In addition, the average price of purchased power increased three percent, which increased purchased power expense by

\$40 million. These increases were partially offset by a six percent decrease in the volume of power purchased in 2011 over 2010. This change in volume decreased purchased power expense by \$80 million.

Operating and maintenance expense increased \$385 million in 2011 over 2010 for several reasons. A major contributor to the increase was related to the operation of TVA's nuclear fleet with nearly \$200 million of additional expenses in 2011 over 2010, largely due to having five refueling outages in 2011 as compared to three during 2010. The scope and duration of these outages was greater in 2011 and included projects to increase plant reliability and increased security costs due to regulatory requirements. Also, prior to 2010, nuclear refueling outage costs were deferred and recognized in expense on a straight line basis over the estimated period until the next routine outage, which was usually between 18 and 24 months. Beginning in 2010, and continuing into 2011, however, outage costs were expensed as incurred resulting in an overlap of refueling outage costs between years. Previously deferred outage costs continued to be amortized as the remaining amounts were collected in rates. Because a greater amount of expense was amortized in 2010, there was a decrease in expenses related to prior year outages of \$60 million in 2011 over 2010. See Note 7 — Deferred Outage Costs.

Declines in the financial markets in prior years combined with a reduction in the assumed discount rate used to estimate post-retirement liabilities caused pension and post-retirement plan expenses to increase over \$100 million between 2010 and 2011. See Critical Accounting Policies and Estimates — Pension and Post-Retirement Benefits. Other costs related to post-employment benefits decreased over \$80 million primarily due to assumptions used in the actuarial valuation of the

Table of Contents

liability related to workers' compensation claims.

Expenses related to TVA's fossil fuel-fired plants increased nearly \$70 million in 2011 as compared to 2010. Projects undertaken to improve the efficiency and effectiveness of generating assets increased expenses by nearly \$40 million. Additional increases in expenses included larger write-offs of obsolete inventory identified during 2011 and write-offs of capital assets of \$16 million. The 2011 expenses also included a full year of operating expenses of nearly \$9 million related to the operation of Lagoon Creek Combined-Cycle Plant, which came on-line in August 2010.

Additional expenditures during 2011 over 2010 related to other initiatives to support TVA's vision, including \$27 million related to performance initiatives, \$25 million to support economic development initiatives, and \$14 million to support efficiency and demand response initiatives.

Depreciation and amortization expense increased \$48 million primarily because of an increase in net plant additions and the implementation of accelerated depreciation rates on certain coal-fired units due to the long-term idling of those units.

Tax equivalent expense increased \$205 million. 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.

Interest Expense. Interest expense and interest rates for 2012, 2011 and 2010 were as follows:

## Interest Expense

For the years ended September 30

	2012	Percent Change	2011	Percent Change	2010
Interest Expense <sup>(1)</sup>					
Interest expense	\$1,444	0.9	% \$1,431	4.2	% \$1,373
Allowance for funds used during construction and nuclear fuel expenditures	(171)	) 35.7	% (126)	) 59.5	% (79)
Net interest expense	\$1,273	(2.5)	)% \$1,305	0.9	% \$1,294
	2012	Percent Change	2011	Percent Change	2010
Interest Rates (average)					
Long-term outstanding power bonds <sup>(2)</sup>	5.860	% 1.1	% 5.799	% (1.9)	)% 5.909
Long-term debt of VIE	4.874	% 100.0	% —	—	—
Discount notes	0.079	% (42.3)	)% 0.137	% 53.9	% 0.089
Blended	5.589	% (2.2)	)% 5.712	% 0.5	% 5.683

## 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.

2012 Compared to 2011

Net interest expense decreased \$32 million for the year ended September 30, 2012. This was primarily related to 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 Nuclear Plant ("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 — Debt Securities Activity — Secured Debt of VIEs.

2011 Compared to 2010

Net interest expense increased \$11 million for the year ended September 30, 2011. This was primarily attributable to an increase in interest expense of \$58 million as a result of an increase in the average balance of long-term outstanding power bonds in 2011 compared to 2010. This increase was partially offset by an increase of \$47 million in AFUDC due to an increase in the construction work in progress base used to calculate AFUDC as a result of ongoing construction activities at Watts Bar Unit 2.

58

---

Table of Contents

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. Due to this limit on Bonds, TVA may 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 (such as the lease-purchase transaction involving the John Sevier CCF), can provide supplementary funding. Also, the impact of energy efficiency and demand response initiatives may reduce generation requirements and thereby reduce capital needs. Capital spending needs could 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. TVA had outstanding, along with power bonds, the long-term debt of two variable interest entities as of September 30, 2012. TVA is required to consolidate the debt of these variable interest entities as the primary beneficiary of the entities. See Lease Financing below. Power bonds have maturities of between one and 50 years. TVA also issues discount notes from time to time. 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
-



Edgar Filing: Tennessee Valley Authority - Form 10-K

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, 2012, was calculated after the end of 2012, 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

Table of Contents

## Investment in power assets.

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

## Short-Term Borrowing Table

	At September 30 2012	For the year ended September 30 2012	At September 30 2011	For the year ended September 30 2011	At September 30 2010	For the year ended September 30 2010
Amount Outstanding (at End of Period) or Average Amount Outstanding (During Period)						
Discount notes	\$1,507	\$1,148	\$482	\$363	\$27	\$905
Weighted Average Interest Rate						
Discount notes	0.085	% 0.079	% 0.001	% 0.137	% 0.040	% 0.089
Maximum Month-End Amount Outstanding (During Period)						
Discount notes	N/A	\$2,550	N/A	\$1,401	N/A	\$1,176

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. TVA held a lower balance of short-term debt at September 30, 2011, than September 30, 2010, primarily because it issued more long-term debt than it redeemed in 2011 and applied some of those proceeds to the redemption of short-term debt. The redemption of short-term debt also accounted for the average balance of short-term debt being lower in 2011 than in 2010. 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 2012 and 2011, TVA issued \$1.1 billion and \$1.6 billion of power bonds, respectively, and redeemed \$2.7 billion and \$1.0 billion of power bonds, respectively. Power bonds outstanding, excluding unamortized discounts and

premiums and net exchange losses from foreign currency transactions, at September 30, 2012 were \$24.1 billion (including current maturities) and at September 30, 2011 were \$24.7 billion (including current maturities). For additional information about TVA debt issuance activity and debt instruments issued and outstanding at September 30, 2012, and 2011, including rates, maturities, outstanding principal amounts, and redemption features, see Note 12 — Debt Securities Activity.

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® 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.

Ratings on TVA's Bonds are provided by three major credit rating agencies. At September 30, 2012, most of TVA's Bonds were rated by at least one major credit rating agency. TVA's short-term discount notes are not rated. The current ratings published by the three rating agencies are as follows: Aaa rating with a Stable outlook; AAA rating with a Negative outlook; and AA+ rating with a Negative outlook. Ratings are not recommendations to buy, sell, or hold any TVA securities and may be subject to revision or withdrawal at any time by the rating agencies. Ratings are assigned independently, and each should be evaluated as such. For a discussion on effects on TVA from a downgrade in credit ratings, see Risk Management Activities — Credit of TVA.

Table of Contents

In December 2011, one of the rating agencies affirmed the AAA rating on TVA Bonds, and revised the outlook to Negative from Stable. The revised outlook was attributed to TVA's status as a wholly-owned corporation of the U.S. government and the very high likelihood and degree of government support in the event TVA encounters financial difficulties. In August 2012, this rating agency affirmed the AAA rating and negative outlook.

**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 and has a maturity date of September 30, 2013. 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, 2012.

TVA also has funding available in the form of three long-term revolving credit facilities totaling \$2.5 billion.

**Summary of Long-Term Credit Facilities**

At September 30, 2012

(in billions)

Maturity Date	Facility Limit	Letters of Credit Outstanding	Cash Borrowings	Availability
January 2014	\$0.5	\$0.5	\$—	\$—
January 2014	1.0	—	—	1.0
June 2017	1.0	0.6	—	0.4
	\$2.5	\$1.1	\$—	\$1.4

The credit facilities accommodate the issuance of letters of credit up to \$1.8 billion. The interest rate on any borrowing under these facilities varies based on market factors and the rating of TVA's senior unsecured long-term non-credit enhanced debt. TVA is required to pay an unused facility fee on the portion of the total \$2.5 billion that TVA has not borrowed or committed under letters of credit. This fee, along with letter of credit fees, may fluctuate depending on the rating of TVA's senior unsecured long-term non-credit enhanced debt. At September 30, 2012, there were \$1.1 billion of letters of credit outstanding under the facilities, and there were no borrowings outstanding. See Note 14 — Other Derivative Instruments — Collateral.

**Lease Financing.** 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 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 and Note 12 — Debt Outstanding — 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.

Table of Contents

## Summary Cash Flows

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

## Summary Cash Flows

For the years ended September 30

	2012	2011	2010
Cash provided by (used in):			
Operating activities	\$2,574	\$2,437	\$1,901
Investing activities	(2,513	) (3,142	) (2,458
Financing activities	300	884	684
Net change in cash and cash equivalents	\$361	\$179	\$127

## Operating Activities

## 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. Fewer pension contributions were required in 2012 as compared to the prior year due to the \$1.0 billion contribution made in 2009 and significant market returns on assets during 2012.

## 2011 Compared to 2010

Net cash flows provided by operating activities increased \$536 million in 2011 compared to 2010. This increase was primarily due to the timing of revenues related to fuel cost recovery as well as a decrease in cash spent on the Kingston ash spill environmental cleanup costs as compared to the prior year.

## Investing Activities

## 2012 Compared to 2011

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 \$436 million decrease from the August 2011 purchase of the Magnolia and a \$298 million decrease spent on major projects due primarily to a delay in the completion of the 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 the purchase of nuclear fuel to be used in the five scheduled nuclear refueling outages during CY 2012 as opposed to the two scheduled nuclear refueling outages during CY 2011. The increase was also due to higher prices for enrichment services in 2012 compared to 2011.

2011 Compared to 2010

Net cash flows used in investing activities increased \$684 million in 2011 compared to 2010. The increase resulted primarily from the purchase of Magnolia for \$436 million and an increase of \$402 million spent on major capital projects, including new combined-cycle combustion turbine units, as well as ongoing construction on Watts Bar Unit 2 and costs related to CCR facilities in 2011. The increase was partially offset by a decrease in nuclear fuels expenditures of \$185 million resulting from less purchases of uranium and enrichment services in 2011 as compared to 2010. Nuclear reactors are refueled every 18 to 24 months and uranium is purchased in advance of the refueling date. In 2010, uranium was purchased to supply fuel for five nuclear reactors that were refueled in 2011, whereas in 2011 uranium purchases were made to supply two nuclear reactors that will be refueled in 2012.

Table of Contents

## Financing Activities

## 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 short-term debt issuances offset by an increase in long-term debt redemptions net of long-term debt issuances. The increase in long-term debt redemptions reflects greater 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.

## 2011 Compared to 2010

Net cash flows provided by financing activities increased \$200 million in 2011 compared to 2010. The change was primarily due to issuance of debt exceeding redemptions by \$1.0 billion in 2011, as compared to issuance of debt exceeding redemptions by \$780 million in 2010. The net increase in debt was due to funding of capacity expansion investments.

## 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		
	2012	2013	2014	2015
Watts Bar Unit 2	\$397	\$500	\$500	\$500
Other capacity expansion expenditures	321	219	212	330
Environmental expenditures	38	392	750	739
Coal combustion residual	141	107	97	79
Transmission expenditures	256	324	420	428
Other capital expenditures <sup>(2)</sup>	727	589	767	786
Total construction expenditures	\$1,880	<sup>(3)</sup> \$2,131	\$2,746	\$2,862

## Notes

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

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

(3) The numbers above exclude AFUDC related to construction expenditures of \$142 million and the change in capital expenditures of \$97 million.

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, 2012. See Note 8, Note 12, Note 13, Note 16, and Note 20 for a further description of these obligations and commitments.

Table of Contents

## Commitments and Contingencies

## Payments due in the year ending September 30

	2013	2014	2015	2016	2017	Thereafter	Total
Debt <sup>(1)</sup>	\$3,815	\$32	\$1,032	\$32	\$1,555	\$17,638	\$24,104
Interest payments relating to debt	1,240	1,154	1,153	1,108	1,094	18,201	23,950
Debt of VIEs	13	13	14	15	16	923	994
Interest payments relating to debt of VIEs	48	48	47	46	46	716	951
Lease obligations							
Capital	2	2	2	2	2	25	35
Non-cancelable operating	62	39	26	25	25	124	301
Purchase obligations							
Power	161	156	156	168	169	3,501	4,311
Fuel	1,441	1,105	1,063	672	366	2,466	7,113
Other	164	158	142	140	129	1,185	1,918
Environmental Agreements	87	87	87	—	—	—	261
Litigation settlements	8	8	4	—	—	—	20
Environmental cleanup costs-Kingston ash spill	126	104	39	—	—	—	269
Payments on other financings	489	100	104	104	104	505	1,406
Payments to U.S. Treasury							
Return of Power Program Appropriation Investment	20	10	—	—	—	—	30
Return on Power Program Appropriation Investment	20	19	18	18	18	198	291
Total	\$7,696	\$3,035	\$3,887	\$2,330	\$3,524	\$45,482	\$65,954

## Note

(1) Does not include noncash items of foreign currency exchange loss of \$41 million and net discount on sale of Bonds of \$61 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

## Payments due in the year ending September 30

	2013	2014	2015	2016	2017	Thereafter	Total
Energy Prepayment Obligations	\$102	\$100	\$100	\$100	\$100	\$110	\$612

EnergyRight® Solutions Program. TVA guarantees repayment on certain loans receivable from customers of TVA's distributors 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 loans receivable and the associated obligation to purchase those loans 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 obligation to purchase those loans are shown in Current assets and Current liabilities, respectively, on TVA's consolidated balance sheets. At September 30, 2012, the carrying amount of the loans receivable, net of discount, was approximately \$150 million. The carrying amount of the associated obligation to purchase those loans was approximately \$185 million.

Liquidity Challenges Related to Generation Resources

Nuclear Regulatory Commission Safety Improvements Orders. On March 9, 2012, the NRC issued three new safety orders stemming from lessons learned from the events that occurred in 2011 at Fukushima Daiichi Nuclear Power Plant ("Fukushima events"). The orders include the development of strategies for responding to an interruption of off-site power, the addition of more reliable instruments to measure water levels in cooling pools where spent nuclear fuel is stored, and the installation of more robust venting systems to prevent hydrogen buildup and explosions. The orders dealing with the loss of off-site power and monitoring spent fuel pools will apply to every nuclear reactor in the U.S. The order requiring more robust containment venting systems 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, which occurred at Fukushima. Licensees

Table of Contents

have until December 2016 or until the second refueling outage after submittal of implementation plans (plans to be submitted in February 2013), whichever is earliest, to fully implement the requirements of these three orders. TVA's implementation of the requirements of the orders will vary from plant to plant due to the timing of the scheduled refueling outages at each plant. 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. Watts Bar Unit 2 is required to comply with the two orders, as currently issued, that apply to the plant prior to issuance of its operating license. At this time TVA is not able to predict the final outcome of these requirements or the associated costs. However, these amounts could be significant.

Watts Bar Nuclear Plant Unit 2. At its April 2012 meeting, TVA's Board approved a revised Estimate to Complete ("ETC") for TVA's Watts Bar Unit 2. The ETC concluded that additional funding of \$1.5 billion to \$2.0 billion will be needed to complete Watts Bar Unit 2, putting the total estimated cost of completion in the range of \$4.0 billion to \$4.5 billion with estimated completion by December 2015. The new estimate also adds an allowance for addressing impacts associated with Fukushima events and other potential emergent risks.

The work on Watts Bar Unit 2 is continuing with the schedule and budget expectations approved by the TVA Board in April 2012. Regulatory and licensing issues remain the primary risks for the project, although some risk exists for future cash flow due to underruns in 2012.

Fukushima Events. As a result of the Fukushima events, the Nuclear Regulatory Commission ("NRC") issued orders requiring the development and implementation of mitigation strategies for beyond design basis events and the installation of reliable spent fuel pool instrumentation. Since the Fukushima events, the NRC has issued additional detailed guidance on the expected response capability to be developed by each nuclear plant site. The Nuclear Energy Institute ("NEI") has also provided guidance that has been adopted by the NRC. TVA has developed plans and schedules for the development and implementation of strategies and physical plant modifications to address the actions outlined in the NRC orders and subsequent NRC and NEI guidance for its plants, which are being incorporated into the construction plans for Watts Bar Unit 2. Based on the current known scope of the Fukushima response requirements and the established TVA schedule, resolution of the identified issues is expected to be completed by the fourth quarter of 2014. However, on-going studies related to flooding and seismic events may result in additional scope that may impact the overall Fukushima response schedule. These studies are expected to be concluded in first quarter of 2013. See Nuclear Regulatory Commission Safety Improvements Orders above.

Waste Confidence. In June 2012, the U.S. Court of Appeals for the District of Columbia Circuit overturned the NRC's Waste Confidence Decision ("WCD"), which provides the bases for analyzing the environmental impacts of spent fuel storage at each reactor site. The result of the court's decision is that an operating license for Watts Bar Unit 2 cannot be issued until actions are taken to address the WCD shortcomings identified by the court. The NRC's proposed resolution is to pursue generic rulemaking on waste confidence in a challenging 24-month period. Consequently, TVA is examining the option of a site-specific submittal on waste confidence on a schedule that would support the timely receipt of an operating license should the NRC not prove successful in implementing its generic rulemaking in a timely manner.

Aquatic Contention. A contention by the Southern Alliance for Clean Energy ("SACE") challenges the reasonableness of, and the adequacy of support for, TVA's conclusion that the cumulative impacts on aquatic ecology from Watts Bar Unit 2 will be insignificant. In direct response to SACE's alleged deficiencies, TVA voluntarily undertook a substantial, aquatic-focused data collection and analysis effort. Final resolution of this issue is expected to occur in a licensing hearing before the Atomic Safety and Licensing Board ("ASLB"). It is anticipated that this hearing will take place in CY 2013 with a decision in CY 2014. At this time, TVA is not able to predict the final resolution of this issue nor what actions it will take if the ASLB rules against it.

Bellefonte Nuclear Plant Unit 1. The TVA Board's approval of the construction of the Bellefonte Nuclear Plant ("Bellefonte") Unit 1 project in August 2011 provided that construction of Bellefonte Unit 1 will not begin until after initial fuel loading at Watts Bar Unit 2. Bellefonte Unit 1 was expected to be completed in 2020. As a result of lessons learned during the construction of Watts Bar Unit 2 and other factors, including the Fukushima events, TVA is analyzing the Bellefonte Unit 1 cost and schedule. It is expected that the cost of the project will increase and the completion date will change. In the event of significant changes, TVA will seek action from the TVA Board.

#### Other Liquidity Challenges

Complying with current and future environmental laws and regulations could require significant expenditures by TVA. For information about TVA's estimates on potential projects related to environmental laws and regulations, see Item 1, Business — Environmental Matters — Estimated Required Environmental Expenditures. In addition, for information about other initiatives that may cause liquidity challenges, see Key Initiatives and Challenges.

#### Off-Balance Sheet Arrangements

At September 30, 2012, TVA had no off-balance sheet arrangements.

Table of Contents

Key Initiatives and Challenges

Generation Resources

TVA faces potentially large capital requirements to maintain its power system infrastructure and invest in new power assets, including generation assets using cleaner energy sources. As a result of the Federal Facilities Compliance Agreement with the Environmental Protection Agency ("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"), TVA expects to retire 18 of its 59 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. However, 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 is also planning to convert all of its wet CCR facilities to dry collection facilities, and the estimated cost of this conversion is between \$1.5 billion and \$2.0 billion. See Item 1, Business — Current Power Supply and — Future Power Supply.

Nuclear Generation. TVA's nuclear fleet is facing some risk due to the cost and timing of newly required regulatory actions related to lessons learned from the Fukushima events. See Liquidity Challenges Related to Generation Resources — Nuclear Regulatory Commission Safety Improvement Orders.

Browns Ferry continues to operate under a heightened degree of the NRC oversight. The NRC's principal inspection to address TVA's actions in response to the 2011 red finding is anticipated in the first half of 2013. The inspection will look at the entire range of programs, processes, and procedures in place for operating, maintaining, designing, and modifying Browns Ferry. See Regulatory Compliance — Browns Ferry.

Idling of Coal-Fired Units. In 2011, TVA announced plans to idle approximately 2,700 megawatts of its oldest and least-efficient coal-fired plants and to review other units in an effort to address operational challenges and reduce costs. TVA idled Johnsonville Fossil Plant ("Johnsonville") Units 7, 8, 9 and 10 on March 1, 2012 (564 MW of summer net capability) and announced plans to idle Johnsonville Units 5 and 6 and Colbert Fossil Plant ("Colbert") Unit 5 by October 1, 2012 (686 MW of summer net capability). The idling of the Johnsonville units and Colbert Unit 5 was earlier than required by the Environmental Agreements.

Due to unanticipated operating challenges primarily at Raccoon Mountain Pumped-Storage Plant ("Raccoon Mountain"), TVA is re-evaluating the previously announced idling dates of these units. Johnsonville Unit 9 (141 MW of summer net capability) was brought back into service during June 2012. Johnsonville Unit 10 (141 MW of summer net capability) was brought back into service in July 2012. The idling of Johnsonville Units 5-6 and 9-10 has been delayed to the end of 2013, and the idling of Colbert Unit 5 has been delayed. Depending on capacity needs, TVA may return other idled units into service or extend unit operation beyond previously planned idle dates. TVA still anticipates being compliant with the terms of the Environmental Agreements. See Item I, Business — Current Power Supply.

Consistent with the Environmental Agreements, Units 1 and 2 at John Sevier Fossil Plant ("John Sevier") will be retired by December 31, 2012. The remaining two units at John Sevier will be idled by December 31, 2012. The four John Sevier units have a summer net capability of 704 MW. Johnsonville Units 1-4 will be retired by December 31, 2017. These four units have a summer net capability of 428 MW. See Note 1 — Depreciation.

Status of Other Generation Units. TVA had several hydroelectric and combustion turbine units removed from service as of September 30, 2012.

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, Raccoon Mountain units were taken out of service. The units, with a net summer capability of 1,616 MW, are utilized to balance the transmission system as well as generate power. The units are expected to be returned to service in the 2013 to 2014 timeframe. One unit returned to limited service with a partially restacked rotor on October 24, 2012. TVA plans to dispatch generation from other TVA units and purchase power to compensate for the loss in generating capacity.

Effective May 1, 2012, four simple cycle combustion turbine units at TVA's Allen Fossil Plant, with a total net summer capability of 64 MW, and two simple cycle combustion turbine units at Gallatin Fossil Plant ("Gallatin"), with a total net summer capability of 144 MW, were designated as temporarily unavailable for operation until repairs are performed. Restoration projects to return the units to active service are being planned for the fall of 2012 through the spring of 2014.

River System Operations. The warm winter weather in the southeastern United States and below-normal rainfall and runoff during the spring of 2012 posed a challenge to TVA in meeting the demands of a variety of stakeholders. These demands included power production, navigation, water quality, water supply, and recreation. Conventional hydroelectric generation

## Table of Contents

decreased two percent in the year ended September 30, 2012, as compared to the same period of the prior year.

Higher river temperatures and the need to protect water quality and aquatic wildlife curtailed generation at certain plants during 2012. Gallatin and Cumberland Fossil Plants on the Cumberland River were particularly affected. In addition to warmer stream flows due to weather conditions, these plants continue to experience reduced summer stream flows by the U.S. Army Corps of Engineers, which has reduced water flows to support its dam safety remediation work on the Wolf Creek and Center Hill Dams. Damage of certain cooling towers at Browns Ferry due to age and condition may cause thermal challenges in the future. Cooling tower 3 at Browns Ferry was damaged during 2012 and similar conditions may exist in cooling tower 4. An independent inspection of towers 1-6 has been authorized during 2013. Based on the outcome of the inspection, TVA will take appropriate actions to ensure compliance with thermal regulations. It is anticipated that strategic operation of the affected waterways and the additional cooling tower at Browns Ferry that was completed in 2012 will help to mitigate thermal issues experienced in prior years.

### Regulatory Compliance

Browns Ferry. 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, and TVA expects this heightened oversight to continue through CY 2013.

In February 2012, the NRC conducted a key additional inspection that evaluated TVA's ability to identify and correct plant and performance problems at Browns Ferry. During the inspection, the NRC identified one potentially "greater than green" violation of the NRC requirements. The violation involved concerns regarding training provided to plant operators associated with new fire protection procedures. In August 2012, the NRC determined that the violation addressed a concern of low to moderate (white) safety significance. The NRC inspected TVA's corrective actions to this issue in October 2012. The associated NRC inspection report documenting these results has not been formally issued as of this date.

As a result of challenges with the performance of a key safety system (high pressure coolant injection ("HPCI")) on Browns Ferry Unit 1, the related NRC Reactor Oversight Process Performance Indicators entered the "white" performance band. As a result, the NRC conducted a supplemental inspection regarding this finding in October 2012. The associated NRC inspection report documenting these results has not been formally issued as of this date.

Additionally, because of three unplanned reactor shutdowns at Browns Ferry Unit 3 at the end of the spring 2012 refueling outage, the related NRC Reactor Oversight Process Performance Indicators entered the "white" performance band. As a result, the NRC will conduct a supplemental inspection in addition to the inspections related to the 2011 red finding. This supplemental inspection, which will focus on TVA's analysis and corrective actions for the unplanned outages, is scheduled to occur in the fall of 2012.

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 much improvement remains to be realized, there are initial indications that improvement is occurring. TVA anticipates that the NRC will conduct a significant inspection of Browns Ferry's improvement progress in the second quarter of CY 2013. The TVA Board has approved up to \$138 million through 2015 to



accelerate improvements in Browns Ferry's performance and reliability.

In October 2012, the Institute of Nuclear Power Operations ("INPO") Accrediting Board of the National Academy of Nuclear Training renewed accreditation for Browns Ferry's training programs for chemistry technicians, radiation protection technicians, instrumentation and controls, electrical and mechanical maintenance. However, the INPO Board placed the engineering training program on probation. A recovery plan is being developed to get the engineering training program off of probation by April 2013. The cost of recovery is not expected to be material.

Hydrology Issues. Updates to the TVA analytical hydrology model have indicated that under "probable maximum flood" assumptions, 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 flood waters would pass safely and not cause failure of these dams. Due to the possibility that several dams would heavily impact nuclear plant operations, TVA implemented interim dam modifications in the first quarter of 2010 by installing engineered, interconnected, fabric-lined containers filled with compacted sand to protect four upstream dams from embankment overtopping. TVA is preparing an Environmental Impact Statement in accordance with the National Environmental Policy Act to identify permanent solutions to replace the sand-filled containers which were intended only for temporary use.

The updated hydrology models also indicated that under probable maximum flood assumptions, increased flood levels

Table of Contents

could affect equipment at Watts Bar as well as at Sequoyah Nuclear Plant ("Sequoyah"). In addition to the interim dam modifications described above, compensatory measures were also put into place at Watts Bar and Sequoyah. 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. The near-term improvements involve the construction of flood barriers around specific components or buildings at the plants. The longer-term solutions may involve permanent modifications to several upstream dams or other engineering solutions. Any specific improvements will be identified after the completion of necessary environmental reviews discussed above. The costs associated with the potential improvements to the plants and the dams are still unknown but could be significant.

As discussed above under Liquidity and Capital Resources — Liquidity Challenges Related to Generation Resources — Nuclear Regulatory Commission Safety Improvement Orders, 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. The results of these analyses and the NRC's response to the information could identify the need for additional modifications.

The NRC is reviewing newly installed protections for certain equipment at Watts Bar to determine whether temporary modifications are adequate to protect the equipment under probable maximum flood conditions. TVA's subsequent review of the probable maximum flood conditions indicates that the protections would not be needed. The NRC inspections are ongoing and TVA anticipates an opportunity to discuss this matter with the NRC in November 2012.

As a result of the update to TVA's hydrology model, TVA is performing additional hydrological assessments at all of its other dams. The total financial impact of permanent modifications to any additional dams identified as a result of the assessment is being evaluated and should be completed by 2015, and these amounts could be significant.

Kingston Fossil Plant. 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 first quarter 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.

Blue Ridge Dam

When TVA acquired Blue Ridge Dam in 1939, there was known damage to the water inlet piping supplying the hydroelectric turbine in the powerhouse on the downstream side of the dam. TVA initiated a rehabilitation project in 2009 and replaced the inlet piping and corrected other safety issues including stabilizing the intake tower and the upstream face of the dam. Work to repair and stabilize the downstream side of the dam was nearly complete when, on February 29, 2012, monitoring surveys indicated some down slope movement. Subsequent increased surveillance and monitoring has indicated that settlement and down slope movement has continued but remains within recently established safety tolerances.

Based on TVA's continuous monitoring and analysis, TVA believes the dam is safe at this time. Small reservoir releases have been approved in order to retain summer storm runoff. Additional engineering analyses are underway to determine the cause of the movement and long-term remediation plans. The analysis for normal operating conditions is expected to be completed by the first quarter of 2013. The analysis for the seismic condition is expected to be completed by the first quarter of 2014.

## Fuel Supplies

Fuel inventories fluctuate from time to time depending on various factors, including demand for electricity, market price of fuel, unit outages, transportation infrastructure limitations, plant coal consumption rates, and weather conditions which may interrupt production or deliveries. Additionally, inventory levels may be affected by the idling of coal-fired units or the installation of emission control equipment.

Fuel inventories at September 30, 2012 were \$19 million higher than at September 30, 2011, due primarily to lower than anticipated usage of fuel oil in coal-fired and gas-fired generation. This lower coal-fired generation reflects lower overall generation due to the mild winter and less than expected economic growth, as well as a shift in generation sources due to lower natural gas prices in 2012.

## Government Accountability Office Audit Findings

The U.S. Government Accountability Office ("GAO") released a report on December 1, 2011, regarding TVA's energy efficiency and capital expenditures planning. The report was requested by the chairman of the U.S. Senate Committee on Environment and Public Works. The GAO stated that TVA could benefit from a consultant's study on regional energy efficiency

## Table of Contents

potential to help ensure that TVA is making the most cost-effective resource decisions to meet its vision of leadership in energy efficiency improvements. TVA agreed with the GAO. Prior to the release of the report, TVA had already commissioned a study by an outside firm. The results of the study have been received and show that TVA's energy efficiency plans are within the achievable range of potential energy savings for the region. Its findings are consistent with TVA's IRP, the agency's 20-year energy roadmap, and TVA's plans for energy efficiency and demand response programs. TVA will continue to analyze the details of the study and incorporate them into future energy efficiency and demand response planning.

The GAO also recommended that TVA develop a written capital expenditure plan that includes the full costs of the assets in which TVA plans to invest and the sources of funding for acquiring those assets. Although TVA already has a number of interrelated and coordinated planning processes for capital expenditures, it understands that the more formal processes recommended by the GAO have the potential to promote greater effectiveness in the financial planning processes. TVA is working to refine and improve these processes.

### Rate-making

Although its rates are below the national average, TVA has established a goal to have its overall effective rate in the top quartile as benchmarked against the Top 100 Utilities. TVA understands the importance of competitive rates as a key to its economic development mission and its mission of providing low-cost power to the people of the Valley. In support of this goal, TVA continues to review and modify its rate structure to meet the needs of its customers.

For distributor customers, the default wholesale rate structure is seasonal time-of-use ("TOU"), with an option to elect a SDE structure. The wholesale rate provisions originally specified the SDE option would expire in September 2012. In April 2012, the TVA Board approved an optional revised SDE structure and an optional enhanced TOU structure that became available in October 2012, and 142 of TVA's distributor customers elected to move to the enhanced TOU structure.

In August 2003, the TVA Board approved a 6.1 percent rate adjustment for a ten-year period, beginning in 2004. The rate adjustment was designed to fund investments associated with TVA's clean air program and was structured to provide approximately \$365 million per year. Currently, the environmental adjustment recovers approximately \$415 million per year. It will terminate in 2013 unless the TVA Board approves continuing it for an additional period or replaces it with a new adjustment addendum.

### Pension Fund

As of September 30, 2012, TVA's qualified pension plan had assets of \$7.0 billion compared with liabilities of \$11.9 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 \$600 million were paid to participants in 2012.

### Pending Regulation and Legislation

Environmental. TVA anticipates that clean air regulations will eventually require all coal-fired units to install air quality controls, including scrubbers and selective catalytic reduction systems for SO<sub>2</sub>, NO<sub>x</sub>, and mercury control. TVA also expects that legislation or regulations will eventually require it to reduce carbon dioxide ("CO<sub>2</sub>") emissions or purchase CO<sub>2</sub> allowances. Furthermore, TVA believes it is likely that new laws or regulations will come into effect in the future that will require electric utilities to obtain a specified portion of their power supply from renewable resources. The cost of compliance with any such laws and regulations is currently unknown, but compliance could

require significant expenditures by TVA. TVA would have to recover such costs in rates or pursue some other action which, among other options, might include idling or retiring additional coal-fired units. See Item 1, Business — Current Power Supply and — Future Power Supply.

Health Care. There is a risk of increased health care costs associated with the Affordable Care Act legislation. During 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. 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 with required changes in a cost-effective manner.

#### 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.

## Table of Contents

### Safeguarding Assets

**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 respective 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 respective 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, United States Nuclear Regulatory Commission 10 CFR 73.54 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 Department of Homeland Security ("DHS") and the United States Computer Emergency Readiness Team ("US-CERT"). US-CERT functions as a liaison between DHS and the public and private sector to coordinate responses to security threats from the internet.

Although there was a significant increase in the number of cyber attacks in 2012, 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.

### Future Workforce Needs and Development

Although TVA has traditionally experienced low employee turnover, potential risks exist because of retirements and competition for talent from other companies. TVA's nuclear workforce is aging and nearing retirement. Given the renewed interest in nuclear generation, there is a limited number of trained/experienced workers to meet staffing needs. Attracting and retaining employees with the skills needed to achieve TVA's vision of becoming one of the nation's leading providers of low-cost and cleaner energy (skills related to new nuclear construction, construction and installation of new environmental equipment and controls, energy efficiency and demand response initiatives, and the implementation of new regulations, for example) also present workforce challenges, especially given the growing need to control costs and the salary freeze for federal employees enacted on December 22, 2010. In September 2012, the pay freeze was extended until March 27, 2013. (See Legislative and Regulatory Matters for a discussion of the salary freeze.) To ensure that TVA is able to attract and retain the workforce needed to achieve its vision, TVA revised its workforce planning program which was implemented agency-wide during 2012.

### Interagency Agreement with the Department of Energy

Under the U.S. Department of Energy ("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 mixed oxide fuel in reactors at Browns Ferry and Sequoyah. As part of the evaluation of MOX, TVA is participating as a cooperating agency. TVA could make a decision in 2013 on whether to continue to pursue 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 in the 2018 timeframe. TVA's three criteria for implementing MOX 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.

#### Customers/Counterparties Risk

United States Enrichment Corporation. TVA extended its contract with United States Enrichment Corporation ("USEC"), a subsidiary of USEC, Inc., its largest directly served customer, in May 2012. Power sales under the contract will continue through May 31, 2013. Power sales to USEC represented five percent and four percent of TVA's total operating revenues for the years ended September 30, 2012, and 2011, respectively. See Note 14 — Counterparty Credit Risk.

USEC is also a supplier of enrichment services for uranium for fueling TVA's nuclear units through November 2014. USEC is, among others, a participant in a high assay tails (depleted uranium hexafluoride) enrichment program. This tails enrichment program may allow USEC to extend its enrichment operations through May 31, 2013. TVA has contracted to buy a substantial portion of the output of this program. Also in May 2012, TVA entered into an enriched product and uranium hexafluoride supply agreement with one of the participants to the tails enrichment program, Energy Northwest. Should USEC fail to provide enrichment services, TVA has sufficient nuclear fuel inventory available to mitigate near-term supply risks, and

Table of Contents

also expects to be able to procure material at reasonable rates in the liquid market for nuclear fuel.

MF Global. On October 31, 2011, MF Global Holding Ltd. and its subsidiary MF Global Finance USA Inc. filed for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy Code. On the same date, a Securities Investor Protection Act ("SIPA") proceeding was filed against MF Global Inc. ("MF Global"). TVA had used MF Global to clear certain trades and had posted \$33 million cash collateral with MF Global at the time of the bankruptcy filing. TVA has recovered approximately \$8 million of this balance from the trustee appointed in the SIPA proceeding ("Trustee"). TVA filed a claim with the Trustee to recover the remaining funds that TVA deposited with MF Global, and on June 4, 2012, the Trustee fully allowed TVA's claim. TVA sold its claim to a third party in September 2012 resulting in a write-off of less than \$2 million.

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 Committee of the TVA Board. While TVA's estimates and assumptions are based on its knowledge of current events and actions it may undertake in the future, actual results may ultimately differ from these estimates and assumptions.

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
<b>Regulatory Accounting</b>		
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 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	TVA has not made any material changes in the accounting methodology used to record regulatory assets and liabilities during the past three fiscal years.  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



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, 2012, TVA had \$11.9 billion of Regulatory assets and \$300 million of Regulatory liabilities.

political environment and is subject to change in the future.

assets and liabilities.

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.

Table of Contents

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 reasonable 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 clean up costs related to the Kingston ash spill contain uncertainties because it requires management to estimate the cost required to cleanup the site. Costs included in the environmental clean up 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, 2012, would have affected the liability by approximately \$110 million in 2012.</p>
<p>At September 30, 2012, TVA estimated that these costs will range from \$1.1 billion to \$1.2 billion. TVA has incurred \$856 million of remediation costs through September 30, 2012. 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>Final Closure Design – TVA is still in the process of designing the final closure of the failed dredge cell, lateral expansion, and ash pond area. Until the final design is completed and contracts for the work are awarded, cost estimates are subject to change.</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 TDEC order) or regulatory directives, natural resource damages (other than payments required under a</p>	

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 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.

#### 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 obligation ("AROs") may be made based on engineering studies. For nuclear assets, the studies are performed annually and 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 are charged to a regulatory asset. See Note 11.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
Nuclear Decommissioning		
<p>Utilities that own and operate nuclear plants are required to use different procedures in estimating nuclear decommissioning costs under GAAP than those that are used in estimating nuclear decommissioning costs that are reported to the NRC. The two sets of procedures produce different estimates for the costs of decommissioning primarily because of the difference in the discount rates used to calculate the present value of decommissioning costs.</p>	<p>The following key assumptions can have a significant effect on estimates related to the nuclear decommissioning costs reported in TVA's nuclear ARO liability:</p>	<p>TVA has not made any material changes in the accounting methodology used to record the nuclear ARO liability during the past three years.</p>
<p>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 are invested in debt and equity securities and certain derivative instruments. The derivative instruments are used across various asset classes to achieve a desired investment structure. The balance in the trust at September 30, 2012, 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.</p>	<p>Timing- In projecting decommissioning costs, two assumptions must be made to estimate the timing of plant decommissioning. First, the date of the plant's retirement must be estimated. (At a multiple unit site, the estimated retirement date is based on the unit with the longest license period remaining.) Second, an assumption must be made on the timing of the decommissioning. 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.</p>	<p>A 10 percent change in TVA's ARO for nuclear decommissioning cost at September 30, 2012, would have affected the liability by approximately \$311 million in 2012.</p>
<p>At September 30, 2012, the present value of the estimated future nuclear decommissioning cost under GAAP was \$2.2 billion and was included in AROs, and the unamortized regulatory asset of \$914 million was</p>	<p>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.</p>	
	<p>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</p>	

included in Regulatory assets. Under the NRC's regulations, the present value of the estimated future nuclear decommissioning cost was \$1.2 billion at September 30, 2012. This decommissioning cost estimate is based on the NRC's requirements for removing a plant from service and terminating the operating license.

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.

Table of Contents

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, 2012. 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 equity and fixed-income market performance. The assets of the fund are invested in securities directly and indirectly 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><b>Timing</b> – 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><b>Technology and Regulation</b> – 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 coal combustion residual ("CCR") facilities, TVA assumes that any future closures will require more costly materials and processes than what is legally required at September 30, 2012.</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><b>Discount Rate</b> – TVA uses its incremental lending 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</p>	<p>A 10 percent change in TVA's ARO for non-nuclear decommissioning costs at September 30, 2012, would have affected the liability by approximately \$110 million in 2012.</p>

flows required to satisfy TVA's non-nuclear decommissioning obligation. At September 30, 2012, 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.

### Pension and Other Post-Retirement Benefits

TVA sponsors a defined benefit pension plan that is qualified under IRS 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.

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, and various actuarial calculations, assumptions, and accounting mechanisms. The most significant of these factors are discussed below.

Accounting Mechanisms. In accordance with current accounting methodologies, 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.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p>Expected Return on Plan Assets. The qualified defined benefit pension plan is the only plan that is funded with qualified 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 to determine the expected return on plan assets. 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 2012, 2011, and 2010, TVA adjusted the expected return on plan assets rate used to develop the net pension benefit cost for 2012, 2011, and 2010 to 7.25 percent, 7.50 percent, and 7.75 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. The expected rate of return had been reduced both in 2010 and 2011 based upon the annual studies performed and change of investment allocation policies. Investment allocation changes in 2010 shifted a portion of equities to fixed income, and in September 2011, the TVARS board approved 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 2012, the TVARS Board approved a new initial asset allocation policy that includes additional asset class diversification and maintains the</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 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 GAAP. The actuarial gain related to the difference between expected and actual return on pension plan assets for 2012 was \$616 million and the actuarial loss related to this difference was \$444 million in 2011. Compared with the assumed return of 7.25 percent, the 2012 actuarial gain is due to the 17 percent return on the fair value of assets, whereas the 2011 actuarial loss was due to the less than one percent return on the fair value of assets. The differences between</p>



long-term expected return of 7.25 percent (see Risk Management Activities — Investment Price Risk and Note 19 — Plan Investments).

#### Compensation

Increases. Assumptions related to compensation increases are based on the results obtained from an actual TVA experience study performed during the most recent six years for retirees as well as other plan participants. TVA obtained an updated study in 2008 and determined that future compensation would increase at rates between 3.30 percent and 10.10 percent per year, depending upon the employee's age. Based upon the current active participants, the average assumed compensation increase used to determine benefit obligations for 2012 and 2011 was 4.44 percent and 4.43 percent, respectively. The average assumed compensation increases used to determine net periodic benefit expense for 2012, 2011 and 2010 were 4.43 percent, 4.41 percent, and 4.40 percent, respectively.

expected and actual return is recognized as an increase and decrease in the related regulatory asset for 2012 and 2011, respectively. A 0.25 percent decrease in the rate of return on plan assets would increase the 2012 pension cost by \$15 million.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p>Discount Rate. In the case of selecting an assumed discount rate, TVA reviews market yields on high-quality corporate debt and long-term obligations of the U.S. Treasury and endeavors to match, through the use of a hypothetical bond portfolio, instrument maturities with the maturities of its pension obligations in accordance with the prevailing accounting standards. The selected bond portfolio is derived from a universe of high quality corporate bonds 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 net periodic pension cost were 4.50 percent, 5.00 percent, and 5.75 percent during 2012, 2011, and 2010, respectively. The discount rate used to determine the benefit obligations were 4.00 percent, 4.50 percent, and 5.00 percent during 2012, 2011, and 2010. The discount rate is determined at the beginning of the period. TVA plans to use a discount rate of 4.00 percent in the determination of 2013 net periodic pension expense and also used this rate to value plan obligations at the end of 2012. Changes in the discount rate for 2012 were due to decreased long-term interest rates. The discount rate is somewhat volatile because it is determined based upon the prevailing rate as of the measurement date. The discount rate used to determine the net periodic post-retirement cost is the same rate used to determine net periodic pension cost due to a similar expected duration of the post-retirement and pension benefit</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 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 2012 pension cost by \$18 million and 2012 projected benefit obligation by \$367 million.</p> <p>Expected Contributions. In 2012, TVA made contributions of \$8 million to the SERP and \$41 million to the other post-retirement benefit plans. TVA expects to contribute \$6 million to the SERP and \$38 million to the other post-retirement benefit plans in 2013. In 2009 TVA entered into an agreement with TVARS resulting in TVA prefunding annual contributions through 2013 for a total of \$1 billion. As a result, TVA does not plan to contribute to the qualified defined benefit pension plan in 2013. In 2011, TVA made an additional discretionary contribution of \$270 million due, in large part, to poor market returns during that year. In 2012, the qualified defined pension plan's assets exceeded market return expectations and no discretionary contribution was made.</p>

obligations.

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 2008 and, accordingly, adjusted the mortality rates from the 1983 Group Annuity Mortality Tables to the RP-2000 Mortality Tables. During 2010, company experience was re-examined and it was determined that TVA's mortality experience has continued to improve. As a result, TVA adjusted the mortality rates to the RP-2000 Combined Healthy Mortality Table for males and females projected to 2013 using scale AA at September 30, 2010. There were no changes to the mortality assumptions in 2012 or 2011.

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 2012 and 2011 were 8.50 percent and 8.00 percent, respectively. The 2012 health care cost trend rate of 8.50 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 rate used to determine the post-retirement net benefit cost was 8.00 percent for 2010, 2011, and 2012. TVA plans to use 8.50 percent in the determination of 2013 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, the effect on a one percent increase in the assumed health care cost trend rate would impact the post-retirement service and interest cost components by \$7 million and the accumulated post-retirement benefit obligation by \$110 million. Likewise, a one percent decrease in the health care cost trend rate would impact the postretirement service and interest cost components by \$(7) million and the accumulated post-retirement benefit obligation by \$(114) million.

Table of Contents

Description	Judgments and Uncertainties	Effect if Actual Results Differ From Assumptions
	<p>Cost of Living Adjustment. The qualified defined benefit pension plan includes a cost of living adjustment ("COLA") that is generally indexed against the Consumer Price Index ("CPI"), subject to a floor and ceiling. The COLA was temporarily reduced for a four-year period beginning January 1, 2010 for current retirees, and eligibility for the COLA was changed to age 60 for employees retiring on or after January 1, 2010. The COLA assumption has been 2.50 percent since 2009. Due to stabilizing long-term expectations, TVA determined the COLA assumption should be held at 2.50 percent at September 30, 2012.</p>	

## 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") resulted in a decrease of \$1 million in the fair value of the interest rate swaps, and \$2 million in the fair values of the currency swaps, at September 30, 2012.

## Table of Contents

**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 resulted in a decrease of \$47 million in the fair values of coal contracts in an asset position at September 30, 2012.

**Commodity Derivatives under the Financial Trading Program.** 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, 2012.

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 as compared to TVA's current 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, 2012, the aggregate counterparty credit risk adjustments applied to TVA's derivative asset and liability positions were decreases of \$49 million and \$2 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. Additionally, TVA's credit rating downgrade in August 2011 required TVA to post \$100 million of additional collateral under certain physical and financial contracts that contain rating triggers.

## Table of Contents

### 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. These two-year freezes apply to calendar years 2011 and 2012. The TVA Board members are covered by the first freeze and TVA's officers (Vice President and above) are covered by the second freeze. TVA will comply with these legislative freezes. Accordingly, TVA's officers will not receive any salary increases, including performance-based salary increases, during calendar years 2011 and 2012 except in the case of promotions. Any salary increases that TVA's officers received for 2011, based on performance during 2010, were effective October 1, 2010, prior to the effective date of the salary freeze legislation and were not affected by the two-year freeze requirement.

Following the passage of the legislation described above, President Obama issued a memorandum to federal agencies not directly covered by the legislation, which includes TVA, requesting that these agencies also comply with the terms of the salary freeze. In response, TVA has chosen to voluntarily implement a salary freeze for manager, specialist and excluded employees during calendar years 2011 and 2012 in accordance with the spirit in which the President and Congress approved the salary freeze. 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.

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 will be subject to recordkeeping and reporting requirements related to its derivatives, 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.

### 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 \$354 million with respect to Legal Proceedings at September 30, 2012. 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.

## Table of Contents

### 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 Nuclear Officer; Executive Vice President and Chief Generation Officer; Executive Vice President and Chief Energy Delivery Officer; Executive Vice President and Chief Administrative Officer; Executive Vice President and Chief Financial Officer; Executive Vice President and General Counsel; Senior Vice President of Nuclear Construction; Senior Vice President of Policy and Oversight; Vice President and Chief Risk Officer; Vice President and Chief of Staff; and a designated representative from Office of the Inspector General 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 at the RMSC, ERC, and TVA Board levels, and (3) developing and improving risk governance structure and risk assessment processes and methodologies.

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 rate mechanism. 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, crude oil, and coal. 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, coal, 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, 2012, and 2011, would have resulted in decreases of approximately \$119 million and \$101 million, respectively, in the fair value of TVA's natural gas trading derivative instruments at these dates.

**Coal.** A hypothetical 10 percent decline in the market price of coal on September 30, 2012, and 2011, would have resulted in decreases of approximately less than \$1 million, in the fair value of TVA's financial coal derivative instruments at both these dates.

Fuel Oil. A hypothetical 10 percent decline in the market price of fuel oil on September 30, 2012, and 2011, would have resulted in decreases of approximately \$3 million and \$4 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, 2012, and 2011, would have resulted in decreases of approximately \$11 million and \$9 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 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, U.S. Treasury inflation-protected securities, commodities, currencies, and private partnerships. At September 30, 2012, and 2011, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$117 million and \$95 million, respectively. See Critical Accounting Policies

Table of Contents

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 September 30, 2012, and 2011, an immediate 10 percent decrease in the price of the investments in the trust would have reduced the value of the trust by \$26 million and \$19 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 2012, the TVARS Board approved a new initial asset allocation policy. The approved investment allocation policy has targets of 48 percent equity including U.S., non-U.S. and private equity investments, 27 percent fixed income securities, 15 percent public real assets including Treasury Inflation-Protected Securities ("TIPS"), commodities and Master Limited Partnerships ("MLPs"), and 10 percent private real assets. The qualified pension plan assets are invested in equity securities, debt securities, U.S. equities, international equities, private real estate, timber, investment-grade debt, high-yield debt, U.S. Treasury inflation-protected securities, currencies, and derivative instruments such as futures, options, swaps, and forwards. At September 30, 2012, and 2011, 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 \$703 million and \$655 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, 2012, and 2011, an immediate 10 percent decrease in the value of the SERP investments would have reduced the value by \$4 million and \$3 million, respectively.

**Interest Rate Risk**

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

**Short-Term Investments.** 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 of interest that TVA received on its short-term investments during 2012 were zero percent, TVA would have received \$1 million less in interest from its short-term investments during 2012. At September 30, 2011, TVA had \$507 million of cash and cash equivalents, and the average balance of cash and cash equivalents for 2011 was \$909 million. The average interest rate that TVA received on its short-term investments during 2011 was less than one percent. If the rates that TVA received on its short-term investments during 2011 were zero percent, TVA would have received \$1 million less in interest on short-term investments during 2011. 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, 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. At September 30, 2011, TVA's short-term borrowings were \$482 million, and the current maturities of long-term debt were \$1.5 billion. Based on TVA's interest rate exposure at September 30, 2011, an immediate one percentage point increase in interest rates would have resulted in an increase of \$20 million in TVA's short-term interest expense.

Long-Term Debt. At September 30, 2012, and 2011, 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, 2012, and 2011, the average life of TVA's debt portfolio was 17.0 years and 17.6 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, 2012. At September 30, 2011, TVA had three interest rate swaps and one swaption outstanding. Net unrealized gains and losses on these instruments are reflected on TVA's 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, 2012, an immediate one-half percentage point decrease in interest rates would have increased

Table of Contents

the interest rate swap liabilities by \$295 million. Based on TVA's interest rate exposure at September 30, 2011, an immediate one percentage point decrease in interest rates would have increased the interest rate swap liabilities by \$194 million and a half percentage point decrease in interest rates would have increased the swaption liability by \$197 million.

Currency Exchange Rate Risk

At September 30, 2012, and 2011, 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, 2012, and 2011, 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 municipal and cooperative distributor customers, 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 five percent of TVA's total operating revenues in 2012. USEC's senior unsecured credit ratings are currently CCC- by Standard & Poor's and Caa2 by Moody's. As a result of its credit rating, USEC has provided credit assurance to TVA under the terms of its power contract. TVA also buys a significant amount of uranium enrichment services from USEC.

TVA had concentrations of accounts receivable from three customers that represented 26 percent of total accounts receivable at both September 30, 2012 and 2011.

Table of Contents

The table below summarizes TVA's customer credit risk from trade accounts receivable at September 30, 2012 and 2011:

## Customer Credit Risk

At September 30

	2012	2011
Trade accounts receivable *		
Investment grade		
Municipalities and cooperative distributor customers	\$871	\$995
Exchange power arrangements	3	2
Industries and federal agencies directly served	44	51
Internally rated - investment grade		
Municipalities and cooperative distributor customers	636	573
Exchange power arrangements	1	—
Industries and federal agencies directly served	11	11
Non-investment grade		
Industries and federal agencies directly served	5	1
Internally rated - non-investment grade		
Exchange power arrangements	3	—
Industries and federal agencies directly served	11	5
Total trade accounts receivable	1,585	1,638
Other accounts receivable		
Miscellaneous accounts	88	102
Provision for uncollectible accounts	(7	) (1
Total other accounts receivable	81	101
Accounts receivable, net	\$1,666	\$1,739

## Note

\* Includes unbilled power receivables of \$13 million and \$10 million at September 30, 2012 and September 30, 2011, respectively.

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

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

**Credit of Suppliers.** If one of TVA's fuel or purchased power suppliers fails to perform under the terms of its contract with TVA, TVA might lose the money that it paid to the supplier under the contract and have to purchase replacement fuel or power on the spot market, perhaps at a significantly higher price than TVA was entitled to pay under the contract. In addition, TVA might not be able to acquire replacement fuel or power in a timely manner and thus might be unable to satisfy its own obligations to deliver power. TVA has a power purchase agreement with a supplier that expires on March 31, 2032. The supplier's senior secured credit ratings are currently CC by Standard & Poor's and Caa1 with Moody's. As a result of the supplier's credit ratings, the company has provided credit assurance to TVA under the terms of its agreement.

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



Table of Contents

Credit of TVA

In August 2011, one credit rating agency lowered the long-term rating on TVA Bonds to AA+ from AAA. A further 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.

Subsequent Events

See Note 23, which discussion is incorporated by reference into Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations.

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

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

Table of Contents

## ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

TENNESSEE VALLEY AUTHORITY  
CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended September 30

(in millions)

	2012	2011	2010
Operating revenues			
Sales of electricity	\$11,086	\$11,723	\$10,713
Other revenue	134	118	161
Total operating revenues	11,220	11,841	10,874
Operating expenses			
Fuel	2,680	2,926	2,092
Purchased power	1,189	1,427	1,127
Operating and maintenance	3,510	3,617	3,232
Depreciation and amortization	1,919	1,772	1,724
Tax equivalents	622	662	457
Total operating expenses	9,920	10,404	8,632
Operating income	1,300	1,437	2,242
Other income (expense), net	33	30	24
Interest expense			
Interest expense	1,444	1,431	1,373
Allowance for funds used during construction and nuclear fuel expenditures	(171)	) (126	) (79
Net interest expense	1,273	1,305	1,294
Net income (loss)	\$60	\$162	\$972

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

Table of ContentsTENNESSEE VALLEY AUTHORITY  
CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## ASSETS

	2012	2011
Current assets		
Cash and cash equivalents	\$ 868	\$ 507
Restricted cash and investments	11	11
Accounts receivable, net	1,666	1,739
Inventories, net	1,097	1,028
Regulatory assets	774	543
Other current assets	90	215
Total current assets	4,506	4,043
Property, plant, and equipment		
Completed plant	45,917	44,187
Less accumulated depreciation	(22,169)	) (20,643
Net completed plant	23,748	23,544
Construction in progress	4,768	4,662
Nuclear fuel	1,176	1,073
Capital leases	35	26
Total property, plant, and equipment, net	29,727	29,305
Investment funds	1,465	1,168
Regulatory and other long-term assets		
Regulatory assets	11,127	11,505
Other long-term assets	509	372
Total regulatory and other long-term assets	11,636	11,877
Total assets	\$ 47,334	\$ 46,393

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

Table of ContentsTENNESSEE VALLEY AUTHORITY  
CONSOLIDATED BALANCE SHEETS

At September 30

(in millions)

## LIABILITIES AND PROPRIETARY CAPITAL

	2012	2011
Current liabilities		
Accounts payable and accrued liabilities	\$1,922	\$1,840
Environmental cleanup costs - Kingston ash spill	126	182
Accrued interest	376	403
Current portion of leaseback obligations	443	80
Current portion of energy prepayment obligations	102	105
Regulatory liabilities	191	280
Short-term debt, net	1,507	482
Current maturities of power bonds	2,308	1,537
Current maturities of long-term debt of variable interest entities	13	—
Total current liabilities	6,988	4,909
Other liabilities		
Post-retirement and post-employment benefit obligations	6,279	6,007
Asset retirement obligations	3,289	3,138
Other long-term liabilities	2,680	2,405
Leaseback obligations	760	1,202
Energy prepayment obligations	510	612
Environmental cleanup costs - Kingston ash spill	143	194
Regulatory liabilities	109	285
Total other liabilities	13,770	13,843
Long-term debt, net		
Long-term power bonds, net	20,269	22,412
Long-term debt of variable interest entities	981	—
Total long-term debt, net	21,250	22,412
Total liabilities	42,008	41,164
Commitments and contingencies (Note 20)		
Proprietary capital		
Power program appropriation investment	288	308
Power program retained earnings	4,492	4,429
Total power program proprietary capital	4,780	4,737
Nonpower programs appropriation investment, net	620	630
Accumulated other comprehensive income (loss)	(74	) (138
Total proprietary capital	5,326	5,229
Total liabilities and proprietary capital	\$47,334	\$46,393

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



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

	2012	2011	2010
Cash flows from operating activities			
Net income (loss)	\$60	\$162	\$972
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)	1,947	1,792	1,743
Nuclear refueling outage amortization cost	—	42	102
Amortization of nuclear fuel cost	264	225	238
Non-cash retirement benefit expense	607	465	364
Prepayment credits applied to revenue	(105)	) (105)	) (105)
Fuel cost adjustment deferral	(61)	) 69	) (898)
Fuel cost tax equivalents	47	135	) (89)
Environmental cleanup costs – Kingston ash spill – non cash	73	76	62
Changes in current assets and liabilities			
Accounts receivable, net	89	(62)	) (342)
Inventories and other, net	(131)	) (71)	) (119)
Accounts payable and accrued liabilities	60	60	308
Accrued interest	(26)	) (4)	) 6
Pension contributions	(8)	) (274)	) (6)
Environmental cleanup costs – Kingston ash spill, net	(103)	) (108)	) (369)
Other, net	(139)	) 35	34
Net cash provided by operating activities	2,574	2,437	1,901
Cash flows from investing activities			
Construction expenditures	(2,119)	) (2,417)	) (2,015)
Combustion turbine asset acquisition	—	(436)	) —
Nuclear fuel expenditures	(361)	) (216)	) (401)
Change in restricted cash and investments	—	(11)	) —
Purchases of investments, net	(48)	) (56)	) (42)
Loans and other receivables			
Advances	(2)	) (21)	) (25)
Repayments	10	11	21
Other, net	7	4	4
Net cash used in investing activities	(2,513)	) (3,142)	) (2,458)
Cash flows from financing activities			
Long-term debt			
Issues of power bonds	1,126	1,587	1,666
Issues of variable interest entities	1,000	—	—
Redemptions and repurchases of power bonds	(2,717)	) (1,021)	) (69)
Redemptions of variable interest entities	(6)	) —	—
Short-term debt issues (redemptions), net	1,024	455	(817)
Proceeds from leasebacks	—	5	11
Payments on leases and leasebacks	(84)	) (118)	) (94)
Bond premium received	—	—	28
Proceeds from call monetization	60	—	—

Edgar Filing: Tennessee Valley Authority - Form 10-K

Financing costs, net	(75	) (8	) (10	)
Payments to U.S. Treasury	(27	) (27	) (29	)
Other, net	(1	) 11	(2	)
Net cash provided by financing activities	300	884	684	
Net change in cash and cash equivalents	361	179	127	
Cash and cash equivalents at beginning of year	507	328	201	
Cash and cash equivalents at end of year	\$868	\$507	\$328	

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

88

---

Table of Contents

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

	Power Program Appropriation Investment	Power Program Retained Earnings	Nonpower Programs Appropriation Investment, Net	Accumulated Other Comprehensive Income (Loss)	Total	Comprehensive Income (Loss)
Balance at September 30, 2009	\$ 348	\$ 3,291	\$ 654	\$(75)	) \$ 4,218	
Net income (loss)	—	982	(10)	) —	972	\$ 972
Other comprehensive income (loss)						
Net unrealized gain (loss) on future cash flow hedges	—	—	—	(37)	) (37)	) (37)
Reclassification to earnings from cash flow hedges	—	—	—	17	17	17
Total other comprehensive income (loss)	—	—	—	(20)	) (20)	) (20)
Total comprehensive income (loss)						\$ 952
Return on power program appropriation investment	—	(9)	) —	—	(9)	)
Return of power program appropriation investment	(20)	) —	(4)	) —	(24)	)
Balance at September 30, 2010	\$ 328	\$ 4,264	\$ 640	\$(95)	) \$ 5,137	
Net income (loss)	—	172	(10)	) —	162	\$ 162
Other comprehensive income (loss)						
Net unrealized gain (loss) on future cash flow hedges	—	—	—	(50)	) (50)	) (50)
Reclassification to earnings from cash flow hedges	—	—	—	7	7	7
Total other comprehensive income (loss)	—	—	—	(43)	) (43)	) (43)
Total comprehensive income (loss)						\$ 119
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	\$ 60
Other comprehensive income (loss)						
Net unrealized gain (loss) on future cash flow hedges	—	—	—	99	99	99
Reclassification to earnings from cash flow hedges	—	—	—	(35)	) (35)	) (35)
Total other comprehensive income (loss)	—	—	—	64	64	64
Total comprehensive income (loss)						\$ 124
Return on power program appropriation investment	—	(7)	) —	—	(7)	)



Edgar Filing: Tennessee Valley Authority - Form 10-K

Return of power program appropriation investment	(20	) —	—	—	(20	)
Balance at September 30, 2012	\$288	\$4,492	\$620	\$(74	)	\$5,326

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

89

---

Table of Contents

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Dollars in millions except where noted)

Note		Page No.
<u>1</u>	<u>Summary of Significant Accounting Policies</u>	<u>90</u>
<u>2</u>	<u>Impact of New Accounting Standards and Interpretations</u>	<u>96</u>
<u>3</u>	<u>Accounts Receivable, Net</u>	<u>96</u>
<u>4</u>	<u>Inventories, Net</u>	<u>97</u>
<u>5</u>	Net Completed Plant	<u>97</u>
<u>6</u>	<u>Other Long-Term Assets</u>	<u>97</u>
<u>7</u>	<u>Regulatory Assets and Liabilities</u>	<u>98</u>
<u>8</u>	Variable Interest Entities	<u>101</u>
<u>9</u>	<u>Kingston Fossil Plant Ash Spill</u>	<u>102</u>
<u>10</u>	<u>Other Long-Term Liabilities</u>	<u>103</u>
<u>11</u>	<u>Asset Retirement Obligations</u>	<u>103</u>
<u>12</u>	<u>Debt and Other Obligations</u>	<u>104</u>
<u>13</u>	Leaseback Obligations	<u>109</u>
<u>14</u>	<u>Risk Management Activities and Derivative Transactions</u>	<u>110</u>
<u>15</u>	<u>Fair Value Measurements</u>	<u>116</u>
<u>16</u>	Proprietary Capital	<u>122</u>
<u>17</u>	<u>Other Income (Expense), Net</u>	<u>123</u>
<u>18</u>	Supplemental Cash Flow Information	<u>124</u>
<u>19</u>	<u>Benefit Plans</u>	<u>124</u>
<u>20</u>	Commitments and Contingencies	<u>137</u>
<u>21</u>	Related Parties	<u>144</u>
<u>22</u>	Unaudited Quarterly Financial Information	<u>145</u>
<u>23</u>	<u>Subsequent Event</u>	<u>145</u>

## 1. Summary of Significant Accounting Policies

## General

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

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

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

## Table of Contents

derived in connection with those activities. The activities related to stewardship properties do not meet the criteria of an operating segment under accounting principles generally accepted in the United States of America ("GAAP"). Accordingly, these assets and properties are included as part of the power program, TVA's only operating segment.

Power rates are established by the TVA Board of Directors ("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 (2012, 2011, 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 of providing electricity. 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 two variable interest entities ("VIEs"), created in January 2012, of which TVA is 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 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 would materially impact TVA's financial condition, results of operations, or cash flows.

#### Reclassifications

Certain reclassifications have been made to the 2011 and 2010 Statements of Cash Flows in the Cash flows from financing activities section, as \$(12) million and \$(13) million of debt issuance discounts previously reported as Financing costs, net for the years ended September 30, 2011 and 2010, respectively, were reclassified as Long-term debt — Issues of power bonds.

## Table of Contents

### Cash and Cash Equivalents

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

### Restricted Cash and Investments

Restricted cash reflects amounts withheld from payment on the purchase of a combined-cycle gas plant to secure the seller's indemnity obligations under the related acquisition agreement.

### 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 \$7 million and \$1 million at September 30, 2012, and 2011, respectively, for accounts receivable. Additionally, loans receivable of \$191 million and \$74 million at September 30, 2012, and 2011, respectively, are included in Other long-term assets and reported net of allowances for uncollectible accounts of \$12 million and \$11 million at September 30, 2012, and 2011.

### 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 customers for the period of time from the meter-read date to the end of the month. Exchange power sales are presented in the accompanying 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 distributor customers. These transactions are structured as indefeasible rights of use ("IRUs"), which are the exclusive right to use a specified amount of fiber optic capacity for a specified term. TVA accounts for the consideration received on transfers of fiber optic capacity for cash and on all of the other elements deliverable under an IRU as revenue ratably over the term of the agreement. TVA does not recognize revenue on any contemporaneous exchanges of its fiber optic capacity for an IRU of fiber optic capacity of the counterparty to the exchange.

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

### Inventories

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

Certain Fuel, Materials, and Supplies. 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 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

Table of Contents

operating expense. Nuclear fuel inventories, which are included in Property, plant, and equipment, are valued using the average cost method for raw materials and the specific identification method for nuclear fuel in a reactor. Amortization of nuclear fuel in a reactor is calculated on a units-of-production basis and is included in fuel expense.

Depreciation. TVA accounts for depreciation of its properties using the composite depreciation convention of accounting. Accordingly, the original cost of property retired, 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 expressed as a percentage of the average annual depreciable completed plant was 3.78 percent for 2012, 3.21 percent for 2011, and 2.92 percent for 2010. Average depreciation rates by asset class are as follows:

## Property, Plant, and Equipment Depreciation Rates

At September 30

(percent)

Asset Class	2012	2011	2010
Nuclear	2.71	2.58	2.59
Coal-Fired	5.65	3.80	3.22
Hydroelectric	1.35	1.43	1.43
Gas and oil-fired	3.67	3.70	4.09
Transmission	2.99	3.39	3.40
Other	8.10	7.39	6.03

TVA determined depreciation rates based on a new depreciation study during the second quarter of 2012. Implementation of the new study, exclusive of the impact of idling decisions discussed below, resulted in an \$11 million decrease in depreciation expense during the year ended September 30, 2012.

In an effort to address operational challenges and reduce costs, TVA announced the idling of several coal-fired units during 2012. Due to unanticipated operating challenges, however, TVA subsequently delayed the idle dates for certain of these units and brought certain units back into service. Depreciation rates are adjusted to reflect current assumptions so that the units will be fully depreciated by the applicable idle dates.

TVA idled Johnsonville Fossil Plant ("Johnsonville") Units 7-10 on March 1, 2012. On March 2, 2012, TVA announced plans to idle Johnsonville Units 5 and 6 by October 1, 2012. However, TVA placed Johnsonville Units 9 and 10 back into service during the third and fourth quarters of 2012, and delayed the idling of Johnsonville Units 5, 6, 9, and 10 to the end of 2013. Johnsonville Units 9 and 10 have no remaining book value, having been fully depreciated by the formerly planned idle date of March 1, 2012. Johnsonville Units 1-4 will be retired by December 31, 2017.

On March 2, 2012, TVA announced plans to idle Colbert Fossil Plant ("Colbert") Unit 5 by October 1, 2012. However, the idling of Colbert Unit 5 has been delayed. Additionally, Units 1 and 2 at John Sevier Fossil Plant ("John Sevier") will be retired, and Units 3 and 4 will be idled, by December 31, 2012.

As a result of TVA's decision to idle or retire the units discussed above, TVA recognized \$308 million in accelerated depreciation expense related to these units during the year ended September 30, 2012.

Capital Lease Agreements. Property, plant, and equipment also includes assets recorded under capital lease agreements which primarily consist of production and office facilities of \$24 and \$9 million at September 30, 2012 and 2011, respectively, and fuel fabrication and blending facilities of \$11 million and \$17 million at September 30,



2012 and 2011, respectively.

Allowance for Funds Used During Construction. AFUDC capitalized during the year ended September 30, 2012, was \$171 million as compared with \$126 million capitalized during the year ended September 30, 2011. 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, 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 for qualifying projects, which is used to calculate AFUDC, averaged approximately \$2.5 billion for the year ended September 30, 2012.

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, 2012 and 2011, unamortized computer software costs totaled \$26 million and \$57

## Table of Contents

million, respectively. Amortization expense related to capitalized computer software costs was \$31 million, \$31 million, and \$29 million for 2012, 2011, and 2010, respectively. Software costs that do not meet capitalization criteria are expensed as incurred.

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

### 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, which initiated the amortization of the costs of the BLEU fuel assemblies to nuclear fuel expense. TVA expects to continue to use the blended nuclear fuel to reload the Browns Ferry reactors through at least 2016. BLEU fuel was loaded into Sequoyah Nuclear Plant ("Sequoyah") Unit 2 in 2008, 2009, and 2011.

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 future payments to the DOE of as much as \$250 million. TVA accrues an obligation with each BLEU reload batch related to the portion of the ultimate future payments estimated to be attributable to the BLEU fuel currently in use. At September 30, 2012, this obligation was \$49 million. 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.

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), 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, asset retirement funds, and SERP funds, which are classified as trading, are invested in portfolios of securities generally designed to achieve a return in line with overall equity market performance.

#### 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 customers 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 customer is due upon billing. TVA's DEU program allowed customers to use cash on hand to prepay TVA for some of their power needs, providing funding to TVA and a savings to customers in the form of a discount on future purchases. The distributor customer receives a discount on a specified

## Table of Contents

volume of firm 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, 2012 and 2011 Consolidated Balance Sheets.

TVA recognizes revenue as electricity is delivered to customers, based on the ratio of units of kilowatt-hours delivered to total units of kilowatt-hours under contract. At September 30, 2012, approximately \$52 million had been applied against power billings on a cumulative basis during the life of the program, of which approximately \$5 million was recognized as noncash revenue during 2012. Approximately \$5 million was applied against power billings during each of 2011 and 2010.

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, 2012 and 2011 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, 2012, \$890 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 2012, 2011, and 2010.

Discounts for both programs amounted to \$47 million for each of the years ended September 30, 2012, 2011, and 2010.

## 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. TVA also purchases liability insurance which provides coverage for its directors and officers.

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.

### 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.

Table of Contents

## Maintenance Costs

TVA records maintenance costs and repairs related to its property, plant, and equipment on TVA's statements of operations as they are incurred except for the recording of certain regulatory assets. Historically, 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. See Note 7 — Deferred Outage Costs.

## 2. Impact of New Accounting Standards and Interpretations

**Fair Value Measurement.** In May 2011, the Financial Accounting Standards Board ("FASB") issued amendments to achieve common fair value measurement and disclosure standards to create consistency between GAAP and International Financial Reporting Standards. These changes became effective for TVA on January 1, 2012. The adoption of this guidance did not materially affect TVA's financial condition, results of operations, or cash flows. See Note 15.

The following accounting standards have been issued, but as of September 30, 2012, were not effective and had not been adopted by TVA.

**Comprehensive Income.** In June 2011, FASB issued guidance that will require adjustments to the presentation of TVA's financial information. The guidance eliminates the current option to report comprehensive income and its components in the statement of changes in proprietary capital. The guidance allows for presentation of net income and other comprehensive income in one continuous statement or in two separate, but consecutive statements. These changes became effective for TVA on October 1, 2012. The adoption of this guidance did not materially affect TVA's financial condition, results of operations, or cash flows.

**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 will become effective for TVA on October 1, 2013, and will be applied on a retrospective basis. Since this guidance relates solely to enhanced disclosures in the notes to the consolidated financial statements, it will not have an impact on TVA's financial condition, results of operations, or cash flows.

## 3. Accounts Receivable, Net

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

Accounts Receivable, Net  
At September 30

2012

2011

Edgar Filing: Tennessee Valley Authority - Form 10-K

Power receivables	\$1,585	\$1,638
Other receivables	88	102
Allowance for uncollectible accounts	(7	) (1
Accounts receivable, net	\$1,666	\$1,739

96

---

Table of Contents

## 4. Inventories, Net

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

Inventories, Net  
At September 30

	2012	2011
Materials and supplies inventory	\$605	\$555
Fuel inventory	508	489
Emission allowance inventory	12	11
Allowance for inventory obsolescence	(28	) (27
Inventories, net	\$1,097	\$1,028

## 5. Net Completed Plant

Net completed plant consisted of the following:

Net Completed Plant  
At September 30

	2012			2011		
	Cost	Accumulated Depreciation	Net	Cost	Accumulated Depreciation	Net
Coal-fired	\$13,726	\$7,962	\$5,764	\$13,218	\$7,244	\$5,974
Gas and oil-fired	3,334	916	2,418	2,885	923	1,962
Nuclear	18,042	8,791	9,251	17,786	8,290	9,496
Transmission	6,075	2,427	3,648	5,536	2,142	3,394
Hydroelectric	2,278	869	1,409	2,232	848	1,384
Other electrical plant	1,490	842	648	1,558	844	714
Subtotal	44,945	21,807	23,138	43,215	20,291	22,924
Multipurpose dams	928	347	581	928	338	590
Other stewardship	44	15	29	44	14	30
Subtotal	972	362	610	972	352	620
Total	\$45,917	\$22,169	\$23,748	\$44,187	\$20,643	\$23,544

## 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

	2012	2011
Loans and other long-term receivables, net	\$191	\$74
Coal contract derivative assets	107	285
Currency swap asset	21	—
Other	190	13
Total other long-term assets	\$509	\$372



Edgar Filing: Tennessee Valley Authority - Form 10-K

TVA guarantees repayment on certain loans receivable from customers of TVA's distributors 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 loans receivable, and the associated obligation to purchase those loans, are shown in Other long-term assets and Other long-term

97

---

Table of Contents

liabilities, respectively, on TVA's consolidated balance sheets. The current portion of the loans receivable and the associated obligation to purchase those loans are shown in Current assets and Current liabilities, respectively, on TVA's consolidated balance sheets. At September 30, 2012, the carrying amount of the loans receivable, net of discount, was approximately \$150 million. The carrying amount of the associated obligation to purchase those loans was approximately \$185 million.

## 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

	2012	2011
Current regulatory assets		
Unrealized losses on commodity derivatives	\$310	\$225
Deferred nuclear generating units	237	236
Environmental agreements	87	—
Fuel cost adjustment receivable	68	7
Environmental cleanup costs – Kingston ash spill	72	73
Deferred capital leases	—	2
Total current regulatory assets	774	543
Non-current regulatory assets		
Deferred pension costs and other post-retirement benefits costs	5,517	5,807
Unrealized losses on interest rate derivatives	1,332	1,164
Nuclear decommissioning costs	914	1,012
Environmental cleanup costs - Kingston ash spill	797	874
Construction costs	619	619
Non-nuclear decommissioning costs	550	519
Deferred nuclear generating units	473	709
Unrealized losses on commodity derivatives	335	221
Environmental agreements	237	346
Other non-current regulatory assets	353	234
Total non-current regulatory assets	11,127	11,505
Total regulatory assets	\$11,901	\$12,048
Current regulatory liabilities		
Fuel cost adjustment tax equivalents	\$173	\$127
Unrealized gains on commodity derivatives	18	153
Total current regulatory liabilities	191	280
Non-current regulatory liabilities		
Unrealized gains on commodity derivatives	109	285
Total non-current regulatory liabilities	109	285
Total regulatory liabilities	\$300	\$565

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 contracts on a settlement basis for ratemaking purposes through the fuel rate mechanism. 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.

Table of Contents

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, 2012, and September 30, 2011, were approximately \$229 million and \$234 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 Nuclear Plant ("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 will not continue to be amortized into rates, but will be included in the Bellefonte plant asset balance at completion. This amount has been segregated into a separate non-current regulatory asset account titled Construction costs. Accordingly, the amount of annual amortization of the Bellefonte investment to be included in rates decreased beginning in 2012. 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 2012, \$2 million has been paid with respect to energy efficiency projects, \$24 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 Capital Leases. Deferred capital lease asset costs represent the difference between the Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act ("Uniform System of Accounts") model balances and the balances under GAAP guidance. Under the Uniform System of Accounts, TVA recognizes the initial capital lease asset and liability at the inception of the lease; however, the annual expense under the Uniform System of Accounts is equal to the annual lease payments, which differs from GAAP treatment. This practice results in TVA's capital lease asset balances being higher than they otherwise would have been under GAAP, with the difference representing a regulatory asset related to each capital lease. These costs are being amortized over the respective lease terms as lease payments are made. The amount to be amortized over the next 12 months is included as a current regulatory asset on the balance sheet.

Deferred Pension Costs and Other Post-retirement Benefit Costs. TVA measures its benefit obligations related to pension and other post-retirement benefit ("OPEB") costs at each year-end balance sheet date. TVA recognizes the funded status of the plans on TVA's consolidated balance sheets which in an unregulated environment would result in a corresponding offset to accumulated other comprehensive income ("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 otherwise charged to AOCI for these costs are recorded as a regulatory asset since TVA has historically recovered pension and OPEB expense in

Table of Contents

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, if necessary, 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 statement of operations over a specified recovery period. They are adjusted either upward or downward each year in conjunction with the adjustments in the unfunded pension liability, as calculated by the actuaries. Ultimately this regulatory asset will flow through the statement 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 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 balance sheets as non-current regulatory assets and the related realized gains or losses, if any, are recorded in TVA's 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 and (2) recognition of changes in the liability, TVA's Nuclear Decommissioning Trust ("NDT"), and 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 under provisions of the Uniform System of Accounts. These costs are deferred and amortized (accreted) on a straight-line basis over the weighted average life of TVA's debt portfolio (even though TVA is not a public utility subject generally to FERC jurisdiction).

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.

Deferred Outage Costs. The cost of fuel used in TVA's nuclear units has been amortized and accounted for as a component of the fuel cost adjustment. Nuclear refueling outage and maintenance costs were deferred and amortized on a straight-line basis over the estimated period until the next refueling outage. In 2010, TVA began expensing outage and maintenance costs as incurred. Previously deferred outage costs continued to be amortized as the remaining amounts were collected in rates and were included as a current regulatory asset on the balance sheet. The remaining costs were fully amortized during 2011.

Table of Contents

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.

On January 17, 2012, TVA entered into a \$1.0 billion transaction with John Sevier Combined-Cycle Generation LLC ("JSCCG"), a newly formed entity. In connection with this transaction, TVA and the United States of America agreed to lease the John Sevier Combined-Cycle Facility ("John Sevier CCF") located in Hawkins County, Tennessee, to JSCCG for a term of fifty years (the "Head Lease"). TVA also entered into a construction management agreement ("CMA") with JSCCG under which TVA was obligated to use commercially reasonable efforts to cause the John Sevier CCF to achieve substantial completion by January 14, 2013, or as soon thereafter as commercially practicable. The John Sevier CCF began commercial operations on April 30, 2012.

Also on January 17, 2012, TVA and JSCCG entered into a transaction under which TVA agreed to lease the John Sevier CCF from JSCCG (the "Facility Lease") through January 15, 2042. Throughout the term of the Facility Lease, TVA is responsible for the operation and maintenance (and improvement to the extent required by applicable law) of the John Sevier CCF and takes all power generated by the facility. As long as TVA has made all payments as prescribed by the Facility Lease and there is no payment or bankruptcy default with respect to which JSCCG has exercised dispossessory remedies, the Head Lease will terminate on January 17, 2042, and TVA will own the John Sevier CCF at no additional cost to TVA.

JSCCG is a special single-purpose limited liability company formed 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 newly formed special single-purpose entity established to acquire and hold 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 or expenses of Holdco are 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 mirror 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. See Note 12 — Debt Outstanding — Secured Debt of VIEs. 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, under the terms of the Facility Lease, 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 the administrative or 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 is deemed to have a variable interest in each of these entities. Accordingly, TVA has made qualitative evaluations regarding which interest holders have the power to direct the activities that most significantly impact the economic performance of the entities and have the obligation to absorb losses or receive benefits that could be significant to the entities. The evaluations consider the purpose and design of the businesses, the risks that the businesses were designed to create and pass along to other entities, the activities of the businesses that can be directed and which party can direct them, and the expected relative impact of those activities on the economic performance of the businesses. TVA has the power to direct the activities of an entity when it has the ability to make key operating, investing and financing decisions, including, but not limited to, capital investment and the issuance or redemption of debt. Based on its analysis, TVA has determined 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.

Table of Contents

The financial statement items attributable to carrying amounts and classifications of JSCCG and Holdco as reflected in the Consolidated Balance Sheets are as follows:

## JSCCG and Holdco

## Summary of Impact on Consolidated Balance Sheets

At September 30, 2012

Current liabilities	
Accrued interest	\$ 10
Current maturities of long-term debt of variable interest entities	13
Total current liabilities	23
Long-term debt, net	
Long-term debt of variable interest entities	981
Total long-term debt, net	981
Total liabilities	\$ 1,004

Interest expense of \$34 million related to debt of JSCCG and Holdco is included in the Consolidated Statements of Operations for the year ended September 30, 2012.

JSCCG's and Holdco's creditors do not have any recourse to the general credit of TVA. TVA does not have any obligations to provide financial support to JSCCG or Holdco other than as prescribed in the terms of the Facility Lease and other agreements related to this transaction.

## 9. Kingston Fossil Plant Ash Spill

## The Event

In December 2008, one of the dredge cells at 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 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 first quarter 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 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, 2012, totaled \$856 million. The remaining estimated liability at September 30, 2012, was \$269 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 the June 2010 Tennessee Department of Environment and Conservation ("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

Table of Contents

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, costs associated with new laws and regulations, or costs of remediating any mixed waste discovered during the ash removal process. 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 \$45 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.

## 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

	2012	2011
Interest rate swap liabilities	\$1,723	\$463
Environmental agreements liability	237	346
Coal contract derivative liabilities	205	119
Currency swap liabilities	54	131
Commodity swap derivative liabilities	59	78
Interest rate swaption liability	—	1,077
Other	402	191
Total other long-term liabilities	\$2,680	\$2,405

On April 15, 2012, the counterparty to TVA's interest rate swaption exercised its option to enter into an interest rate swap with TVA. See Note 14 — Derivatives Not Receiving Hedge Accounting Treatment for additional details of this transaction.

TVA guarantees repayment on certain loans receivable from customers of TVA's distributors 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, 2012, the carrying amount of the associated obligation to purchase those loans was approximately \$185 million. See Note 6.

## 11. Asset Retirement Obligations

During the year ended September 30, 2012, TVA's total ARO liability increased \$151 million. The increase resulted primarily from accretion. This item was partially offset by ash area settlement projects that were conducted during the year ended September 30, 2012. The nuclear and non-nuclear accretion were deferred as regulatory assets, and \$54 million of the related regulatory assets was amortized into expense as this amount was collected in rates.

Table of Contents

## Reconciliation of Asset Retirement Obligation Liability

	Nuclear	Non-Nuclear	Total
Balance at September 30, 2010	\$1,941	\$1,022	\$2,963
Settlements (ash storage areas)	—	(22	) (22
Accretion (recorded as regulatory asset)	111	47	158
Additional obligations	—	4	4
Change in estimate	39	(4	) 35
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

## 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, 2012, 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 rent payments under the John Sevier CCF facility lease, 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, 2012, 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.

## Table of Contents

Secured Debt of VIEs. 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.

### Short-Term Debt

The weighted average rates applicable to short-term debt outstanding in the public market at September 30, 2012, 2011, and 2010, were 0.09 percent, 0.00 percent, and 0.04 percent, respectively. During 2012, 2011, and 2010, the maximum outstanding balances of TVA short-term borrowings held by the public were \$3.2 billion, \$1.4 billion, and \$1.3 billion, respectively. For these same years, the average amounts (and weighted average interest rates) of TVA short-term borrowings were approximately \$1.1 billion (0.08 percent), \$363 million (0.14 percent), and \$905 million (0.09 percent), respectively.

### Put and Call Options

Bond issues of \$744 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 Bond issues totaling \$603 million, with maturity dates ranging from 2020 to 2042, 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.

Additionally, TVA has two issues of Puttable 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 five times, from an initial rate of 6.75 percent to the current rate of 4.06 percent. In connection with these resets, \$249 million of the bonds have been redeemed, so that \$326 million of the bonds were outstanding at September 30, 2012. The coupon rate for the 1999 Series A PARRS, which mature in May 2029, has been reset four times, from an initial rate of 6.50 percent to the current rate of 4.15 percent. In connection with these resets, \$254 million of the bonds have been redeemed, so that \$271 million of the bonds were outstanding at September 30, 2012.



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, 2012, 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.

Table of Contents

## Debt Securities Activity

The table below summarizes the long-term debt securities activity for the period from October 1, 2010, to September 30, 2012.

## Debt Securities Activity

For the year ended September 30

	2012	2011
Issues		
Debt of variable interest entities electronotes®	\$ 1,000	\$—
Second quarter	69	40
Third quarter	66	42
Fourth quarter	—	17
2012 Series A	1,000	—
2011 Series A	—	1,500
Discount on debt issues	(9	) (12
Total	\$2,126	\$ 1,587
Redemptions/Maturities		
Debt of variable interest entities electronotes®	\$6	\$—
First quarter	16	2
Second quarter	106	10
Third quarter	40	2
Fourth quarter	27	1
1992 Series D	1,000	—
1998 Series D	5	—
1999 Series A	2	—
2000 Series F	29	—
2001 Series A	—	1,000
2002 Series A	1,486	—
2009 Series A	4	4
2009 Series B	2	2
Total	\$2,723	\$ 1,021

Table of Contents

## Debt Outstanding

Total debt outstanding at September 30, 2012, and 2011, consisted of the following:

## Short-Term Debt

At September 30

CUSIP or Other Identifier	Maturity	Call/(Put) Date	Coupon Rate	2012 Par	2011 Par
Short-term debt, net				\$1,507	\$482
Current maturities of long-term debt of variable interest entities				13	—
Current maturities of power bonds					
880591EE8	5/15/2013		2.250%	3	3
880591EF5	6/15/2013		3.770%	3	2
880591CW0	3/15/2013		6.000%	1,359	—
880591DW9	8/1/2013		4.750%	940	—
880591TEL1	5/15/2013		2.650%	3	3
880591DL3	5/23/2012		7.140%	—	29
880591DT6	5/23/2012		6.790%	—	1,486
88509TEH0	10/15/2023	10/15/2011	5.000%	—	14
Total current maturities of power bonds				2,308	1,537
Total current debt outstanding, net				\$3,828	\$2,019

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

At September 30

CUSIP or Other Identifier	Maturity	Coupon Rate	Call Date	2012 Par	2011 Par	Stock Exchange Listings
electronotes <sup>®(2)</sup>	05/15/2020 - 05/15/2042	2.65 - 5.25%	11/15/2012 - 05/15/2017	\$622	\$661	None
880591BL5	4/15/2012	8.250%		—	1,000	New York Hong Kong,
880591CW0	3/15/2013	6.000%		—	1,359	Luxembourg, Singapore
880591DW9	8/1/2013	4.750%		—	940	New York, Luxembourg
880591DY5	6/15/2015	4.375%		1,000	1,000	New York, Luxembourg
880591EE8 <sup>(3)</sup>	11/15/2015	2.250%		8	11	None
880591DS8	12/15/2016	4.875%	12/15/2006	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
880591EL2	2/15/2021	3.875%		1,500	1,500	New York
880591DC3	6/7/2021	5.805%	(4 )	324	312	

Edgar Filing: Tennessee Valley Authority - Form 10-K

880591EN8	8/15/2022	1.875%	1,000	—	New York, Luxembourg New York
-----------	-----------	--------	-------	---	-------------------------------------

107

---

Table of Contents

880591CJ9	11/1/2025	6.750%		1,350	1,350	New York, Hong Kong, Luxembourg, Singapore
880591300 <sup>(5)</sup>	6/1/2028	4.060%		326	330	New York
880591409 <sup>(5)</sup>	5/1/2029	4.150%		271	274	New York
880591DM1	5/1/2030	7.125%		1,000	1,000	New York, Luxembourg
880591DP4	6/7/2032	6.587%	(4 )	404	390	New York, Luxembourg
880591DV1	7/15/2033	4.700%		472	472	New York, Luxembourg
880591EF5 <sup>(3)</sup>	6/15/2034	3.770%		440	443	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
880591DU3	6/7/2043	4.962%	(4 )	242	234	New York, Luxembourg
880591CF7	7/15/2045	6.235%		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				20,330	22,647	
Unamortized discounts, premiums, and other				(61	) (235	)
Total long-term outstanding power bonds, net				20,269	22,412	
Long-term debt of variable interest entities				981	—	
Total long-term debt, net				\$21,250	\$22,412	

## Notes

(1) Includes net exchange losses from currency transactions of \$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

	2013	2014	2015	2016	2017	Thereafter	Total
Long-term power bonds and long-term debt of variable interest entities including current maturities <sup>(1)</sup>	\$2,321	\$45	\$1,046	\$47	\$1,571	\$18,561	\$23,591

Note

(1) Does not include noncash items of foreign currency exchange loss of \$41 million and net discount on sale of Bonds of \$61 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 matures on September 30, 2013, and is expected to be renewed. 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 issuance, of one year or less. There were no borrowings outstanding under the facility at September 30, 2012.

108

---

Table of Contents

TVA also has funding available in the form of three long-term revolving credit facilities totaling \$2.5 billion. The \$0.5 billion and one of the \$1.0 billion credit facilities mature on January 14, 2014, and the other \$1.0 billion credit facility matures on June 25, 2017. The credit facilities accommodate the issuance of letters of credit up to \$1.8 billion. The interest rate on any borrowing under these facilities varies based on market factors and the rating of TVA's senior unsecured long-term non-credit enhanced debt. TVA is required to pay an unused facility fee on the portion of the total \$2.5 billion which TVA has not borrowed or committed under letters of credit. This fee, along with letter of credit fees, fluctuates depending on the rating of TVA's senior unsecured long-term non-credit enhanced debt. At September 30, 2012, and September 30, 2011, there were \$1.1 billion and \$575 million, 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, 2012, and September 30, 2011, the outstanding leaseback obligations related to CTs and QTE were \$825 million and \$885 million, respectively.

Seven States Power Corporation ("Seven States"), through its subsidiary, Seven States Southaven, LLC ("SSSL"), exercised its option to purchase from TVA an undivided 90 percent interest in a combined-cycle combustion turbine facility in Southaven, Mississippi. As part of interim joint-ownership arrangements, Seven States has the right at any time, and for any reason, until the earlier of the date long-term operational and power sales arrangements are in place or April 23, 2013, to require TVA to buy back Seven States's interest in the facility. TVA will buy back Seven States's interest if long-term operational and power sales arrangements for the facility among TVA, Seven States, and SSSL, or alternative arrangements, are not in place by April 23, 2013. TVA's buy-back obligation will terminate if such long-term arrangements are in place by that date. In the event of a buy-back, TVA will reacquire Seven States's interest in the facility and the related assets. The carrying amount of the buy-back obligation on TVA's consolidated balance sheets was approximately \$378 million at September 30, 2012, and \$397 million at September 30, 2011. At September 30, 2012, this obligation was recorded in Current portion of leaseback obligations on the Consolidated Balance Sheets. See Note 8 for a discussion of the lease purchase arrangement involving the John Sevier CCF.

Bond Ratings Downgrade

On August 8, 2011, a credit rating agency lowered the long-term rating of TVA's rated Bonds from AAA to AA+. This downgrade constituted an event of default under the Amended and Restated Credit Agreement between Seven States and its lenders. Upon the occurrence of such an event of default, Seven States's lenders may either impose a higher default interest rate on the loan or exercise an option to require TVA to reacquire its interest in the Southaven facility and the related assets. On November 1, 2011, Seven States and its lenders, with the consent of TVA, executed an Amendment to the Amended and Restated Credit Agreement. In this amendment, Seven States's lenders agreed to waive this event of default and thus waive the lenders' right to force TVA to reacquire Seven States's interest in the Southaven facility and the related assets or to force Seven States to pay the default interest rate for this event of default. Also, the amendment ties the interest rate on Seven States's credit facilities to TVA's credit rating. Seven States will pay interest on the loan at either (1) the London Interbank Offer Rate ("LIBOR") plus 62.5 basis points if

TVA's corporate credit rating is AAA (or its equivalent) by the nationally recognized credit rating agencies, or (2) LIBOR plus 87.5 basis points if TVA's corporate credit rating is AA+ (or its equivalent) by one or more nationally recognized credit rating agencies.

#### 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.



Table of Contents

## 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.

## 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	
			2012	2011
Currency swaps	To protect against changes in cash flows caused by changes in foreign currency exchange rates (exchange rate risk)		\$99	\$(50 )

## 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	
	2012	2011
Currency swaps	\$(35	) \$7

Note

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

110

---

Table of Contents

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

Derivative Type	Objective of Derivative	Accounting for Derivative Instrument	Amount of Gain (Loss) Recognized in Income on Derivatives	
			2012	2011
Interest rate swaption	To protect against decreases in value of the embedded call (interest rate risk)	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.	\$—	\$—
Interest rate swaps	To fix short-term debt variable rate to a fixed rate (interest rate risk)	MtM gains and losses are recorded as regulatory assets or liabilities until settlement, at which time the gains/losses are recognized in gain/loss on derivative contracts.	—	—
Commodity contract derivatives	To protect against fluctuations in market prices of purchased coal or natural gas (price risk)	MtM gains and losses are recorded as regulatory assets or liabilities. Realized gains and losses due to contract settlements are recognized in fuel expense as incurred.	(22	) (27
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.	(342	) (145

## 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 2012 and 2011.



Table of Contents

## Mark-to-Market Values of TVA Derivatives

At September 30

	2012		2011	
Derivatives that Receive Hedge Accounting Treatment:				
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Currency swaps:				
£200 million Sterling	\$(23	) Other long-term liabilities	\$(44	) Other long-term liabilities
£250 million Sterling	21	Other long-term assets	(24	) Other long-term liabilities
£150 million Sterling	(31	) Other long-term liabilities	(63	) Other long-term liabilities
Derivatives that Do Not Receive Hedge Accounting Treatment:				
	Balance	Balance Sheet Presentation	Balance	Balance Sheet Presentation
Interest rate swaption:				
\$1.0 billion notional	\$—	N/A	\$(1,077	) Other long-term liabilities
Interest rate swaps:				
\$1.0 billion notional	(1,247	) Other long-term liabilities	—	N/A
\$476 million notional	(458	) Other long-term liabilities	(446	) Other long-term liabilities
\$42 million notional	(18	) Other long-term liabilities	(17	) Other long-term liabilities
		Other long-term assets		Other long-term
		\$107; Other current assets		assets \$285; Other current
		\$12; Other		assets \$150; Other
Commodity contract derivatives	(267	) long-term liabilities	239	long-term liabilities
		\$(205); Accounts payable and accrued liabilities		\$(119); Accounts payable and accrued liabilities
		\$(181)		\$(77)
Derivatives under FTP:				
Margin cash account <sup>(1)</sup>	43	Other current assets	34	Other current assets
		Current regulatory assets		Current regulatory assets
		\$(107); Regulatory assets		\$(135); Regulatory assets
Derivatives under FTP <sup>(2)</sup>	(229	) \$(130); Current regulatory liabilities \$6; Regulatory liabilities \$2	(234	) \$(102); Current regulatory liabilities \$3

## 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, 2012, and September 30, 2011 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, 2012:

Edgar Filing: Tennessee Valley Authority - Form 10-K

Currency Swaps Outstanding

At September 30, 2012

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

112

---

Table of Contents

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.

## Derivatives Not Receiving Hedge Accounting Treatment

**Interest Rate Derivatives.** Prior to 2006, TVA entered into four interest rate swaption agreements to protect against decreases in value of the embedded call provisions on certain of its Bond issues. A swaption is a derivative instrument that grants a third party the right to enter into an interest rate swap agreement with TVA under which TVA receives a floating rate of interest and pays the third party a fixed rate of interest equal to the interest rate on the Bond issue whose call provision TVA has monetized. Prior to 2009, the counterparties to three of the swaptions exercised their rights to enter into interest rate swaps with TVA. As described in more detail below, the counterparty to the final interest rate swaption exercised its right to enter into an interest rate swap with TVA in March 2012.

In 2003, TVA monetized the call provisions on the TVA \$1.0 billion 1992 Series D Bonds by entering into an interest rate swaption agreement with a third party in exchange for \$175 million (the "1992 D Swaption"). In March 2012, the counterparty to the 1992 D Swaption agreement exercised its option to enter into an interest rate swap with TVA, effective April 15, 2012, requiring TVA to make fixed-rate payments to the counterparty of 8.25 percent and the counterparty to make floating rate payments to TVA based on LIBOR until April 15, 2042. These payments are based on a notional principal amount of \$1.0 billion and began on July 15, 2012. In association with exercising its option to enter into the interest rate swap with TVA, the counterparty was required to pay TVA \$60 million on the effective date of the transaction.

TVA uses regulatory accounting treatment to defer the MtM gains and losses on the interest rate swaps and swaptions. 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 2012 and 2011, the changes in market value of the interest rate derivatives resulted in deferred unrealized losses of \$168 million and \$365 million, respectively. There were no realized gains or losses for the years ended 2012 and 2011. The net deferred unrealized gains and losses on the 1992 D Swaption were assigned to the resulting interest rate swap upon the effective date of the exercise.

**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, 2012, and September 30, 2011, TVA's coal contract derivatives had net market values of \$(267) million and \$239 million, respectively, which TVA deferred as regulatory assets or liabilities on a gross basis. At September 30, 2012, TVA's coal contract derivatives had terms of up to six years.

The total market value of natural gas derivative contracts at September 30, 2012, and September 30, 2011, was less than \$1 million. At September 30, 2012, natural gas derivative contracts had terms of up to three years.

Commodity Contract Derivatives  
At September 30

	2012			2011		
	Number	Notional	Fair Value	Number of	Notional	Fair
	of Contracts	Amount	(MtM)	Contracts	Amount	Value (MtM)
Coal contract derivatives	23		\$(267	) 38		\$ 239

Edgar Filing: Tennessee Valley Authority - Form 10-K

		46 million tons			66 million tons	
Natural gas contract derivatives	25	51 million mmBtu	\$—	13	5 million mmBtu	\$—

Derivatives Under FTP. TVA has a FTP under which it purchases and sells 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.



Table of Contents

At September 30, 2012, the risks hedged under the FTP were the economic risks associated with the prices of natural gas, fuel oil, crude oil, and coal. Futures contracts and option contracts under the FTP had remaining terms of less than one year. Swap contracts under the FTP had remaining terms of six years or less.

## Derivatives Under Financial Trading Program

	At September 30, 2012		At September 30, 2011	
	Notional Amount	Fair Value (MtM) (in millions)	Notional Amount	Fair Value (MtM) (in millions)
Natural gas (in mmBtu)				
Futures contracts	—	\$—	1,300,000	\$(4 )
Swap contracts	294,462,500	(232 )	232,295,000	(223 )
Option contracts	—	—	—	(1 )
Natural gas financial positions	294,462,500	\$(232 )	233,595,000	\$(228 )
Fuel oil/crude oil (in barrels)				
Futures contracts	—	\$—	—	\$—
Swap contracts	1,390,000	4	1,591,000	(7 )
Option contracts	—	—	90,000	—
Fuel oil/crude oil financial positions	1,390,000	\$4	1,681,000	\$(7 )
Coal (in tons)				
Futures contracts	—	\$—	—	\$—
Swap contracts	—	—	120,000	1
Option contracts	—	—	—	—
Coal financial positions	—	\$—	120,000	\$1

## 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 only 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 \$(21) million at September 30, 2012, and \$(13) million at September 30, 2011. 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:

## FTP Unrealized Gains (Losses)

At September 30

FTP unrealized gains (losses) deferred as regulatory liabilities (assets)	2012	2011
Natural gas	\$(232 )	\$(228 )
Fuel oil/crude oil	4	(7 )
Coal	—	1



Table of ContentsFTP Realized Gains (Losses)  
Years Ended September 30

Decrease (increase) in fuel expense	2012	2011
Natural gas	\$ (116	) \$—
Fuel oil/crude oil	10	20
Coal	—	—

FTP Realized Gains (Losses)  
Years Ended September 30

Decrease (increase) in purchased power expense	2012	2011	
Natural gas	\$ (236	) \$ (165	)

## 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, 2012, and September 30, 2011, 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, 2012, the aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a liability position was \$1.8 billion. TVA's collateral obligations at September 30, 2012, under these arrangements, was \$1.1 billion, for which TVA had posted \$1.1 billion in letters of credit. These letters of credit reduce the available balance under the related credit facilities. TVA's assessment of the risk of its nonperformance includes a reduction in its exposure under the contract as a result of this posted collateral.

For all of its derivative instruments with credit-risk related contingent features:

If TVA remains a majority-owned U.S. government entity but Standard & Poor's ("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 \$45 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 municipal and cooperative distributor customers, 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 26 percent of total outstanding accounts receivable at September 30, 2012, and September 30, 2011. Power sales to TVA's largest directly served industrial customer represented five percent and four percent of TVA's total operating revenues for the years ended September 30, 2012 and 2011, respectively. This customer's senior unsecured credit ratings are currently CCC- by S&P and Caa2 by Moody's. As a result of its credit ratings, this customer has provided credit assurance to TVA under the terms of its power contract.

115

---

## Table of Contents

**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, 2012, 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, 2012, all of TVA's coal contract derivatives were with counterparties whose Moody's credit rating, or TVA's 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.

On October 31, 2011, MF Global Holding Ltd. and its subsidiary MF Global Finance USA Inc. filed for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy Code. On the same date, a Securities Investor Protection Act ("SIPA") proceeding was filed against MF Global Inc. ("MF Global"). TVA had used MF Global to clear certain trades and had posted \$33 million cash collateral with MF Global at the time of the bankruptcy filing. TVA has recovered approximately \$8 million of this balance from the trustee appointed in the SIPA proceeding ("Trustee"). TVA filed a claim with the Trustee to recover the remaining funds that TVA deposited with MF Global, and on June 4, 2012, the Trustee fully allowed TVA's claim. On September 27, 2012, TVA sold its claim to a third party resulting in a write-off of less than \$2 million.

**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 13 different suppliers at September 30, 2012. 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 all 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. The supplier's senior secured credit ratings are currently CC by S&P and Caa1 by Moody's. As a result of its credit ratings, the supplier has provided credit assurance to TVA under the terms of its agreement.

The senior unsecured credit ratings of TVA's largest supplier of uranium enrichment services, which is also TVA's largest industrial customer directly served, are currently CCC- by S&P and Caa2 by Moody's. Any nonperformance by this company could result in TVA incurring additional costs.

## 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.

Table of Contents

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	—	<p>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.</p> <p>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.</p>
Level 2	—	<p>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.</p>
Level 3	—	<p>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.</p>

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 as changes in regulatory assets, regulatory liabilities, or accumulated other comprehensive income/(loss) on TVA's consolidated balance sheets and consolidated statements of changes in proprietary capital. 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.

Investments

At September 30, 2012, Investment funds were composed of \$1.5 billion of securities classified as trading and measured at fair value and \$2 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, and 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 \$150 million at September 30, 2012. 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 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



Table of Contents

(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 liquidated at the measurement date NAV price and are classified as Level 2 valuations. Required notification periods range from zero to 30 days. The funds can be redeemed unless doing so would violate regulations to which the fund is subject, would be unreasonable or impracticable, or would be seriously prejudicial to the fund.

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		2012	2011
SERP	Other income (expense)	\$4	\$7
NDT	Regulatory asset	121	(73)
ART	Regulatory asset	27	(18)

#### 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 derivatives.

The currency swaps and interest rate swaps are classified as Level 2 valuations and are valued based on income approaches using observable market inputs for similar instruments. Prior to its conversion to an interest rate swap in April 2012, the interest rate swaption was classified as a Level 3 valuation and was valued based on an income approach. The valuation was computed using a broker-provided pricing model utilizing interest and volatility rates. While most of the fair value measurement was based on observable inputs, volatility for TVA's swaption was generally unobservable. Therefore, the valuation was derived from an observable volatility measure with adjustments.

#### 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

Table of Contents

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 \$49 million decrease in the fair value of assets and a \$2 million decrease in the fair value of liabilities at September 30, 2012.

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, 2012, and September 30, 2011. Financial assets and liabilities have been classified in their entirety based on the lowest level of input that is significant to the fair value measurement. TVA's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the determination of the fair value of the assets and liabilities and their classification in the fair value hierarchy levels.

## Fair Value Measurements

At September 30, 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	—	(115	) 8
Total	\$ 232	\$ 1,321	\$ 172	\$ (115	) \$ 1,610
Liabilities	Quoted Prices in Active Markets for	Significant Other	Significant Unobservable Inputs	Netting <sup>(1)</sup>	Total

Edgar Filing: Tennessee Valley Authority - Form 10-K

	Identical Liabilities (Level 1)	Observable Inputs (Level 2)	(Level 3)		
Currency swaps	\$—	\$54	\$—	\$—	\$54
Interest rate swaps	—	1,723	—	—	1,723
Commodity contract derivatives	—	—	386	—	386
Commodity derivatives under FTP					
Swap contracts	—	351	—	(115	) 236
Total commodity derivatives under FTP	—	351	—	(115	) 236
Total	\$—	\$2,128	\$386	\$(115	) \$2,399

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 exclusively composed of one class of security are classified in that category. Commingled funds comprising multiple classes of securities are classified as “other commingled funds.”

Table of Contents

## Fair Value Measurements

At September 30, 2011

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	\$73	\$—	\$—	\$—	\$73
Debt securities					
U.S. government corporations and agencies	117	79	—	—	196
Corporate debt securities	—	164	—	—	164
Residential mortgage-backed securities	—	17	—	—	17
Commercial mortgage-backed securities	—	3	—	—	3
Collateralized debt obligations	—	3	—	—	3
Private partnerships	—	—	22	—	22
Commingled funds <sup>(2)</sup>					
Equity security commingled funds	—	467	—	—	467
Debt security commingled funds	—	221	—	—	221
Total investments	190	954	22	—	1,166
Commodity contract derivatives	—	—	436	—	436
Commodity derivatives under FTP					
Swap contracts	—	15	—	(14	) 1
Total commodity derivatives under FTP	—	15	—	(14	) 1
Total	\$190	\$969	\$458	\$(14	) \$1,603
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	\$—	\$131	\$—	\$—	\$131
Interest rate swaps	—	463	—	—	463
Interest rate swaption	—	—	1,077	—	1,077
Commodity contract derivatives	—	—	197	—	197
Commodity derivatives under FTP					
Futures contracts	4	—	—	—	4
Swap contracts	—	244	—	(14	) 230
Option contracts	1	—	—	—	1
Total commodity derivatives under FTP	5	244	—	(14	) 235

Edgar Filing: Tennessee Valley Authority - Form 10-K

Total	\$5	\$838	\$1,274	\$(14	) \$2,103
-------	-----	-------	---------	-------	-----------

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 exclusively composed of one class of security are classified in that category. Commingled funds comprising multiple classes of securities are classified as "other commingled funds."

120

---

Table of Contents

TVA uses internal and external valuation specialists for the calculation of its fair value measurements classified as Level 3. Analytical testing is performed on the change in fair value measurements each period to ensure the valuation is reasonable based on changes in general market assumptions. Significant changes to the estimated data used for unobservable inputs, in isolation or combination, may result in significant variations to the fair value measurement reported.

The following table presents a reconciliation of all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3):

Fair Value Measurements Using Significant Unobservable Inputs  
For the Year Ended September 30

	Private Partnerships	Commodity Contract Derivatives	Interest Rate Swaption	
Balance at October 1, 2010	\$13	\$103	\$(804	)
Purchases	17	—	—	
Issuances	—	—	—	
Sales	—	—	—	
Settlements	(7	) —	—	
Net unrealized gains (losses) deferred as regulatory assets and liabilities	(1	) 136	(273	)
Balance at September 30, 2011	22	239	(1,077	)
Purchases	27	—	—	
Issuances	—	—	—	
Sales	—	—	—	
Settlements <sup>(1)</sup>	—	—	1,077	
Net unrealized gains (losses) deferred as regulatory assets and liabilities	4	(506	) —	
Balance at September 30, 2012	\$53	\$(267	) \$—	

## Note

(1) The interest rate swaption was converted to an interest rate swap in April 2012. See Note 14.

There were no realized or unrealized gains or losses related to the instruments measured at fair value using significant unobservable inputs that affected net income or other comprehensive income during the year ended September 30, 2012. All unrealized gains and losses related to these instruments have been reflected as increases or decreases in regulatory assets and liabilities. See Note 7.

The following table presents quantitative information related to the significant unobservable inputs used in the measurement of fair value of TVA's assets and liabilities classified as Level 3 in the fair value hierarchy:

## Quantitative Information about Level 3 Fair Value Measurements

	Fair Value at September 30 2012	Valuation Technique(s)	Unobservable Inputs	Range	
Assets	\$119	Discounted cash flow	Credit risk	28.6	%*

Commodity contract  
derivatives

Pricing model	Coal supply and demand	1.0 - 1.1 billion tons/year
	Long-term market prices	\$13.50 - \$93.00/ton

Liabilities

Commodity contract derivatives      \$386

Pricing model	Coal supply and demand	1.0 - 1.1 billion tons/year
	Long-term market prices	\$13.50 - \$93.00/ton

\* Applies to only one contract.



Table of Contents

## Other Financial Instruments Not Recorded at Fair Value

TVA uses the methods and assumptions described below to estimate the fair value of each significant class of financial instrument. The fair market value of the financial instruments held at September 30, 2012, and September 30, 2011, may not be representative of the actual gains or losses that will be recorded when these instruments mature or are called or presented for early redemption. The estimated values of TVA's financial instruments not recorded at fair value at September 30, 2012, and September 30, 2011, were as follows:

Estimated Values of Financial Instruments Not Recorded at Fair Value  
At September 30

	Valuation Classification	2012 Carrying Amount	Fair Value	2011 Carrying Amount	Fair Value
Loans and other long-term receivables (including current maturities), net	Level 2	\$225	\$220	\$74	\$68
Long-term outstanding power bonds (including current maturities), net	Level 2	22,577	28,041	23,949	29,425
Long-term debt of variable interest entities (including current maturities)	Level 2	994	1,116	—	—

Due to the short-term maturity of Cash and cash equivalents, Restricted cash and investments, and Short-term debt, net (each considered a Level 1 valuation classification), the carrying amounts of these instruments approximate their fair values.

The fair value for loans and other long-term receivables is estimated by determining the present value of future cash flows using a discount rate equal to lending rates for similar loans made to borrowers with similar credit ratings and for similar remaining maturities, where applicable.

The fair value of long-term debt traded in the public market is determined by multiplying the par value of the debt by the indicative market price at the balance sheet date. The fair value of other long-term debt is estimated by determining the present value of future cash flows using current market rates for similar obligations, giving effect to credit ratings and remaining maturities.

## 16. Proprietary Capital

## Appropriation Investment

TVA's power program and stewardship (nonpower) programs were originally funded primarily by appropriations from Congress. In 1959, Congress passed an amendment to the TVA Act that required TVA's power program to be self-financing from power revenues and proceeds from power program financings. While TVA's power program did not directly receive appropriated funds after it became self-financing, TVA continued to receive appropriations for certain multipurpose and other nonpower mission-related activities as well as for its stewardship activities. TVA has not received any appropriations from Congress for any activities since 1999, and since that time, TVA has funded stewardship program activities primarily with power revenues.

The 1959 amendment to the TVA Act also required TVA, beginning in 1961, to make annual payments to the U.S. Treasury from net power proceeds as a repayment of and as a return on the Power Program Appropriation Investment

until an additional \$1.0 billion of the Power Program Appropriation Investment has been repaid. Of this \$1.0 billion amount, \$30 million remained unpaid at September 30, 2012. Once the \$1.0 billion has been repaid, the TVA Act requires TVA to continue making payments to the U.S. Treasury as a return on the remaining Power Program Appropriation Investment. The remaining Power Program Appropriation Investment will be \$258 million if TVA receives no additional appropriations from Congress for its power program.

Table of Contents

The table below summarizes TVA's activities related to appropriated funds.

Summary of Proprietary Capital Activity  
At or for the Years Ended September 30

	2012		2011		
	Power Program	Nonpower Programs	Power Program	Nonpower Programs	
Appropriation Investment					
Balance at beginning of year	\$308	\$4,351	\$328	\$4,351	
Return of power program appropriation investment	(20	) —	(20	) —	
Balance at end of year	288	4,351	308	4,351	
Retained Earnings					
Balance at beginning of year	4,429	(3,721	) 4,264	(3,711	)
Net income (expense) for year	70	(10	) 172	(10	)
Return on power program appropriation investment	(7	) —	(7	) —	
Balance at end of year	4,492	(3,731	) 4,429	(3,721	)
Net proprietary capital at September 30	\$4,780	\$620	\$4,737	\$630	

Payments to the U.S. Treasury

TVA paid \$20 million each year for 2012, 2011, and 2010 as a repayment of the Power Program Appropriation Investment. In addition, TVA paid the U.S. Treasury \$7 million in 2012, \$7 million in 2011, and \$9 million in 2010 as a return on the Power Program Appropriation Investment. The amount of the return on the Power Program Appropriation Investment is based on the Power Program Appropriation Investment balance at the beginning of that year and the computed average interest rate payable by the U.S. Treasury on its total marketable public obligations at the same date. The interest rates payable by TVA on the Power Program Appropriation Investment were 2.33 percent, 2.40 percent, and 2.58 percent for 2012, 2011, and 2010, respectively.

Accumulated Other Comprehensive Income (Loss)

The items included in Accumulated other comprehensive income (loss) consist of market valuation adjustments for certain derivative instruments. See Note 15.

TVA records exchange rate gains and losses on debt in net income and marks its currency swap assets and liabilities to market through other comprehensive income. TVA had unrealized gains of \$99 million and losses of \$50 million in 2012 and 2011 on the mark-to-market of currency swaps. TVA then reclassifies an amount out of other comprehensive income into net income, offsetting the gain/loss from recording the exchange gain/loss on the debt. The amounts reclassified from other comprehensive income into net income were an increase to net income of \$35 million in 2012, a decrease to net income of \$7 million in 2011, and a decrease to net income of \$17 million in 2010. These reclassifications, coupled with the recording of the exchange gain/loss on the debt, resulted in a net effect on net income of zero for 2012, 2011, and 2010. Due to the number of variables affecting the future gains/losses on these instruments, TVA is unable to reasonably estimate the amount to be reclassified from other comprehensive income to net income in future years.

17. Other Income (Expense), Net

Income and expenses not related to TVA's operating activities are summarized in the following table:

Other Income (Expense), Net

Edgar Filing: Tennessee Valley Authority - Form 10-K

For the years ended September 30

	2012	2011	2010
Interest income	\$21	\$8	\$6
External services	7	19	7
Gains (losses) on investments	5	1	3
Miscellaneous	—	2	8
Total other income (expense), net	\$33	\$30	\$24

123

---

Table of Contents

18. Supplemental Cash Flow Information

Interest paid was \$1.4 billion in each of 2012, 2011, and 2010. These amounts differ from interest expense due to the timing of payments and interest capitalized of \$171 million in 2012, \$126 million in 2011, and \$79 million in 2010 as a part of major capital expenditures.

Cash flows from futures contracts, forward contracts, option contracts, and swap contracts that are accounted for as hedges are classified in the same category as the item being hedged or on a basis consistent with the nature of the instrument.

During 2011, TVA purchased the Magnolia Combined-Cycle Gas Plant ("Magnolia") for \$436 million. Approximately \$11 million of the purchase price will be held by TVA for 547 days after closing to secure the seller's indemnity obligations under the acquisition agreement. On the Consolidated Balance Sheets, the \$11 million is recorded in Restricted cash and investments at September 30, 2012 and 2011 and Accounts payable and accrued liabilities and Other long-term liabilities at September 30, 2012 and 2011, respectively. On the 2011 Statement of Cash Flow, it is presented as a Change in restricted cash flow and investments and as Other cash provided by financing activities.

19. Benefit Plans

TVA sponsors a qualified defined benefit pension plan that covers most of its full-time employees, a qualified defined contribution plan that covers most of its full-time employees, two unfunded post-retirement health care plans that provide for non-vested contributions toward the cost of certain retirees' medical coverage, other postemployment benefits such as workers' compensation, and the SERP.

Overview of Plans and Benefits

**Defined Benefit Pension Plan.** TVA sponsors a qualified defined benefit pension plan for most of its full-time annual employees that provides two benefit structures: the Original Benefit Structure and the Cash Balance Benefit Structure. Eligible employees initially hired on or after January 1, 1996, must participate in the Cash Balance Benefit Structure. A summary of the benefits provided by each structure is as follows:

**Original Benefit Structure.** The pension benefit for a member participating in the Original Benefit Structure is based on the member's creditable service, the member's average monthly salary for the highest three consecutive years of base pay, and a pension factor based on the member's age and years of service, less a Social Security offset.

**Cash Balance Benefit Structure.** The pension benefit for a member participating in the Cash Balance Benefit Structure is based on credits accumulated in the member's account and the member's age. A member's account receives pay credits equal to six percent of his or her straight-time earnings. The account also receives interest credits at a rate set at the beginning of each calendar year equal to the change in the Consumer Price Index ("CPI") plus three percent, with the provision that the rate may not be less than six percent or more than ten percent. The rates of the credits were six percent for calendar years 2012 and 2011.

There are two investment funds within the defined benefit pension plan: the Fixed Benefit Fund and the Variable Fund. TVA's plan contributions are deposited in the Fixed Benefit Fund. Eligible employees are allowed to make voluntary contributions to either the Variable Fund, the Fixed Fund within the Fixed Benefit Fund, or both. Contributions are limited to \$10,000 per year per eligible employee. The pension plan pays interest at the lesser of six percent or the actuarial assumed rate of return less 0.5 percent to employees in the Fixed Fund. Employee

contributions in the Fixed Fund were credited an annual rate of interest of six percent during 2012 and 2011, resulting in credit amounts of \$38 million and \$39 million, respectively. Employee contributions to the Variable Fund are invested in an S&P 500 Stock Index Fund.

The defined benefit pension plan is administered by a separate legal entity, Tennessee Valley Authority Retirement System ("TVARS"), which is governed by its own board of directors (the "TVARS Board"). Upon notification by the TVARS Board of a recommended contribution for the next fiscal year, TVA determines whether to make the recommended contribution or any contribution that may be required by the rules and regulations of TVARS.

Members of both the Original Benefit Structure and the Cash Balance Benefit Structure can also become eligible for a vested supplemental pension benefit based on age and years of service, which is designed to help retirees offset the cost of medical insurance.

**Defined Contribution Plan.** TVARS also administers a qualified defined contribution 401(k) plan to which TVA makes matching contributions of 25 cents on the dollar (up to 1.5 percent of annual pay) for members participating in the Original Benefit Structure and 75 cents on the dollar (up to 4.5 percent of annual pay) for members participating in the Cash Balance Benefit Structure. TVA made matching contributions of approximately \$34 million to the plan during 2012, \$31 million during 2011, and \$27 million during 2010.

Table of Contents

**Supplemental Executive Retirement Plan.** TVA has established a SERP for certain executives in critical positions to provide supplemental pension benefits tied to compensation that exceeds limits imposed by IRS rules applicable to the qualified defined benefit pension plan. TVA has historically funded the annual calculated expense.

**Other Post-Retirement Benefits.** TVA sponsors two unfunded post-retirement benefit plans that provide for non-vested contributions toward the cost of certain eligible retirees' medical coverage. The first plan covers only certain retirees and surviving dependents who do not qualify for TVARS benefits, including the vested supplemental pension benefit. The second plan is designed to place a limit on the out-of-pocket amount certain eligible retirees pay for medical coverage and provides a credit based on years of TVA service and monthly base pension amount, reduced by any TVARS supplemental pension benefits or any TVA contribution from the first plan, described above.

**Other Post-employment Benefits.** TVA employees injured in work-related incidents are covered by the workers' compensation program for federal employees administered through the Department of Labor by the Office of Workers' Compensation Programs in accordance with the provisions of the FECA. FECA provides compensation benefits to federal employees for permanent and temporary disability due to employment-related injury or disease.

**Accounting Mechanisms**

**Regulatory Accounting.** TVA has classified all amounts related to unrecognized prior service costs, net actuarial gains or losses, and subsequent changes in the funded status as regulatory assets.

**Cost Method.** TVA uses the projected unit credit cost method to determine the service cost and the projected benefit obligation for retirement, termination, and ancillary benefits. Under this method, a "projected accrued benefit" is calculated at the beginning of the year and at the end of the year for each benefit that may be payable in the future. The "projected accrued benefit" is based on the plan's accrual formula and upon service at the beginning or end of the year, but it uses final average compensation, social security benefits, and other relevant factors projected to the age at which the employee is assumed to leave active service. The projected benefit obligation is the actuarial present value of the "projected accrued benefits" at the beginning of the year for employed participants and is the actuarial present value of all benefits for other participants. The service cost is the actuarial present value of the difference between the "projected accrued benefits" at the beginning and end of the year.

**Amortization of Net Gain or Loss.** TVA utilizes the corridor approach for gain/loss amortization. Differences between actuarial assumptions and actual plan results are deferred and amortized into periodic cost only when the accumulated differences exceed 10 percent of the greater of the projected benefit obligation or the market-related value of plan assets. If necessary, the excess is amortized over the average remaining service period of active employees.

**Asset Method.** TVA recognizes the impact of asset performance on pension expense over a three-year phase-in period through a "market-related" value of assets calculation. Since the "market-related" value of assets recognizes investment gains and losses over a three-year period, the future value of assets will be impacted as previously deferred gains or losses are recognized. The "market-related" value is used in calculating expected return on plan assets and net gain or loss for pension cost determination.

Table of Contents

## Obligations and Funded Status

The changes in plan obligations, assets, and funded status for the years ended September 30, 2012 and 2011, were as follows:

## Obligations and Funded Status

For the year ended September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2012	2011	2012	2011
Change in benefit obligation				
Benefit obligation at beginning of year	\$ 11,255	\$ 10,394	\$ 800	\$ 658
Service cost	139	120	19	13
Interest cost	490	502	35	32
Plan participants' contributions	30	30	80	78
Amendments	3	—	—	—
Actuarial loss (gain)	686	803	(2	) 135
Net transfers from variable fund/401(k) plan	7	8	—	—
Expenses paid	(5	) (5	) —	—
Benefits paid	(610	) (597	) (121	) (116
Benefit obligation at end of year	11,995	11,255	811	800
Change in plan assets				
Fair value of net plan assets at beginning of year	6,546	6,792	—	—
Actual return on plan assets	1,053	44	—	—
Plan participants' contributions	30	30	80	78
Net transfers from variable fund/401(k) plan	7	8	—	—
Employer contributions	8	274	41	38
Expenses paid	(5	) (5	) —	—
Benefits paid	(610	) (597	) (121	) (116
Fair value of net plan assets at end of year	7,029	6,546	—	—
Funded status	\$(4,966	) \$(4,709	) \$(811	) \$(800

The pension actuarial loss above for 2012 primarily reflects the impact of the reduction in the discount rate from 4.50 percent to 4.00 percent, which increased the liability by approximately \$683 million. The pension actuarial loss for 2011 primarily reflects the impact of the reduction in the discount rate from 5.00 percent to 4.50 percent, which increased the liability by approximately \$591 million.

The other post-retirement actuarial gain for 2012 is primarily due to demographic experience related to per capita costs, contributions, and a slight reduction in the participation rate from 90 percent to 85 percent. These gains were offset by the increase in the health care cost trend rate from 8.00 percent to 8.50 percent and the reduction of the discount rate from 4.50 percent to 4.00 percent, which increased the post-retirement obligation by \$46 million and \$49 million, respectively. The accumulated post-retirement benefit obligation increased by \$11 million from 2011 to 2012.

The other post-retirement actuarial loss for 2011 and the increase of the \$142 million in accumulated post-retirement benefit obligation from 2010 to 2011 reflects the impact of the reduction in the discount rate from 5.00 percent to 4.50 percent, the reset of the initial trend rate, higher claims experience, the impact of the excise tax on high-cost plans and plan election changes, which increased the post-retirement obligation by \$47 million, \$20 million, \$24 million, \$31



million and \$15 million, respectively.

The following changes were made to the cost of living adjustment ("COLA") provisions of TVA's pension plan for current retirees for the four years beginning January 1, 2010:

- For CY 2010, the COLA was zero.

126

---

Table of Contents

- For CY 2011, the COLA was the change in the CPI, capped at 3.0 percent.
- For CY 2012, the COLA was zero.
- For CY 2013, the COLA will be the change in the CPI, capped at 2.5 percent.

At the end of the four-year period, the COLA benefit of CPI, capped at 5.0 percent, is to be restored. Further, the eligibility for the COLA became age 60 for employees who retire on or after January 1, 2010. Finally, the interest crediting rate for employee Fixed Fund balances and future contributions was decreased from 7.25 percent to the lesser of 6.0 percent or the actuarial rate of return minus 0.5 percent effective January 1, 2010.

Amounts recognized on TVA's consolidated balance sheets consist of regulatory assets that have not been recognized as components of periodic benefit cost at September 30, 2012 and 2011, and the funded status of TVA's benefit plans, which are included in Accounts payable and accrued liabilities and Post-retirement and post-employment benefit obligations:

## Amounts Recognized on TVA's Consolidated Balance Sheets

At September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2012	2011	2012	2011
Regulatory assets	\$5,168	\$5,433	\$349	\$374
Accounts payable and accrued liabilities	(5	) (6	) (37	) (39
Post-retirement and post-employment benefit obligations	(4,961	) (4,703	) (774	) (761

Unrecognized amounts included in regulatory assets yet to be recognized as components of accrued benefit cost at September 30 consisted of:

## Postretirement Benefit Costs Deferred as

Regulatory Assets

At September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2012	2011	2012	2011
Unrecognized prior service cost (credit)	\$(229	) \$(255	) \$(51	) \$(58
Unrecognized net loss	5,397	5,688	400	432
Total regulatory assets	\$5,168	\$5,433	\$349	\$374

The projected benefit obligation, accumulated benefit obligation, and fair value of plan assets for the pension plan with accumulated benefit obligations in excess of plan assets at September 30, 2012, and 2011, were as follows:

## Projected Benefit Obligations and Accumulated Benefit Obligations in Excess of Plan Assets

At September 30

	2012	2011
Projected benefit obligation	\$11,955	\$11,255
Accumulated benefit obligation	11,680	10,943
Fair value of net plan assets	7,029	6,546

Table of Contents

The components of net periodic benefit cost and other amounts recognized as changes in regulatory assets for the years ended September 30, 2012, and 2011, were as follows:

Components of Net Periodic Benefit Cost  
For the years ended September 30

	Pension Benefits			Other Post-Retirement Benefits		
	2012	2011	2010	2012	2011	2010
Service cost	\$139	\$120	\$99	\$19	\$13	\$12
Interest cost	490	502	513	35	32	37
Expected return on plan assets	(437	) (488	) (548	) —	—	—
Amortization of prior service cost	(23	) (23	) (24	) (6	) (6	) 6
Recognized net actuarial loss	361	282	181	29	22	17
Net periodic benefit cost as actuarially determined	530	393	221	77	61	72
Amount charged (capitalized) due to actions of regulator	—	11	71	—	—	—
Total net periodic benefit cost recognized	\$530	\$404	\$292	\$77	\$61	\$72

The amounts in the regulatory asset that are expected to be recognized as components of net periodic benefit cost during the next fiscal year are as follows:

Expected Amortization of Regulatory Assets in 2013  
At September 30, 2012

	Pension Benefits	Other Post-Retirement Benefits	Total
Prior service cost (credit)	\$(22	) \$(6	) \$(28
Net actuarial loss	373	26	399

Plan Assumptions

TVA's reported costs of providing the plan benefits are impacted by numerous factors including the provisions of the plans, changing employee demographics, and various assumptions, the most significant of which are noted below.

Actuarial Assumptions

At September 30

	Pension Benefits		Other Post-Retirement Benefits	
	2012	2011	2012	2011
Assumptions utilized to determine benefit obligations at September 30				
Discount rate	4.00	% 4.50	% 4.00	% 4.50
Rate of compensation increase	4.44	% 4.43	% N/A	N/A
Initial health care cost trend rate	N/A	N/A	8.50	% 8.00
Ultimate health care cost trend rate	N/A	N/A	5.00	% 5.00
Ultimate trend rate is reached in year beginning	N/A	N/A	2019	2017

Assumptions utilized to determine net periodic benefit cost for the years ended September 30

Edgar Filing: Tennessee Valley Authority - Form 10-K

Discount rate	4.50	% 5.00	% 4.50	% 5.00	%
Expected return on plan assets	7.25	% 7.50	% N/A	N/A	
Rate of compensation increase	4.43	% 4.41	% N/A	N/A	
Initial health care cost trend rate	N/A	N/A	8.00	% 8.00	%
Ultimate health care cost trend rate	N/A	N/A	5.00	% 5.00	%
Ultimate trend rate is reached in year beginning	N/A	N/A	2017	2016	

128

---

Table of Contents

**Discount Rate.** In selecting the assumed discount rate, TVA reviews market yields on high-quality corporate debt and long-term obligations of the U.S. Treasury and endeavors to match, through the use of a hypothetical bond portfolio, instrument maturities with the maturities of its pension obligations in accordance with the prevailing accounting standards. The selected bond portfolio is derived from a universe of high quality corporate bonds of Aa-rated quality or higher. After the bond portfolio is selected, a single interest rate is determined that equates the present value of the plan's projected benefit payments discounted at this rate with the market value of the bonds selected. Based on recent market trends, TVA decreased its discount rate used to determine benefit obligations from 4.50 percent at the end of 2011 to 4.00 percent at the end of 2012. TVA had decreased its discount rate from 5.00 percent at the end of 2010 to 4.50 percent at the end of 2011.

**Rate of Return.** 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 2012, 2011, and 2010, TVA adjusted the expected return on plan assets rate used to develop the net pension benefit cost for 2012, 2011, and 2010 to 7.25 percent, 7.50 percent, and 7.75 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. The expected rate of return had been reduced both in 2010 and 2011 based upon the annual studies performed and a change of investment allocation policies. Investment allocation changes in 2010 shifted a portion of equities to fixed income, and in September 2011, the TVARS Board approved 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 2012, the TVARS Board approved a new initial asset allocation policy that includes additional asset class diversification and maintains the long-term expected return of 7.25 percent (see Plan Investments below). The actual rate of return for the years ended September 30, 2012 and 2011 were 16.81 percent and less than one percent, respectively.

**Compensation Increases.** Assumptions related to compensation increases are based on the results obtained from an actual company experience study performed during the most recent five years for plan participants. TVA obtained an updated study in 2008 and determined that future compensation would likely increase at rates between 3.30 percent and 10.10 percent per year, depending upon the employee's age. Based upon the current active participants, the average assumed compensation increase used to determine benefit obligations for 2012 and 2011 was 4.44 percent and 4.43 percent, respectively.

**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 2008 and, accordingly, adjusted the mortality rates from the 1983 Group Annuity Mortality Tables to the RP-2000 Mortality Tables. During 2010, TVA's experience was reexamined and it was determined that TVA's mortality experience has continued to improve. As a result, TVA adjusted the mortality rates to the RP-2000 Mortality Tables for males and females projected to 2013 using scale AA at September 30, 2010. There were no changes to the mortality assumptions in 2012.

**Health Care Cost Trends.** TVA reviews actual recent cost trends and projected future trends in establishing health care cost trend rates. As of September 30, 2012 and 2011, the medical care trend rates used to determine benefit obligations were 8.50 percent and 8.00 percent, respectively. TVA increased the rate in 2012 based upon exhibited annual increases in costs per covered life due primarily to changes in inflation, utilization, and recent healthcare law regulations. This increase is assumed to gradually decrease each successive year until it reaches a 5.00 percent annual increase in health care costs in the year beginning October 1, 2019, and beyond. The assumed healthcare cost trend rate used to determine the post-retirement net benefit cost was 8.00 percent for 2012, 2011, and 2010.

Edgar Filing: Tennessee Valley Authority - Form 10-K

Cost of Living Adjustment. The qualified defined benefit pension plan includes a COLA that is generally indexed against the CPI, subject to a floor and ceiling. The CPI fell during 2009, and market-based measures of inflation expectations at the end of 2009 projected slow growth in the CPI through 2015. Additionally, 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 for employees retiring on or after January 1, 2010. The COLA assumption has been 2.5 percent since 2009. Due to stabilizing long-term expectations, TVA determined the COLA assumption should be held at 2.5 percent at September 30, 2012.

Sensitivity of Costs to Changes in Assumptions. The following chart reflects the sensitivity of pension cost to changes in certain actuarial assumptions:

Sensitivity to Certain Changes in Pension Assumptions  
At September 30, 2012

Actuarial Assumption	Change in Assumption	Impact on 2012 Pension Cost	Impact on 2012 Projected Benefit Obligation
Discount rate	(0.25	) \$18	\$367
Rate of return on plan assets	(0.25	) 15	N/A

Table of Contents

Each fluctuation above assumes that the other components of the calculation are held constant and excludes any impact for unamortized actuarial gains or losses.

The following chart reflects the sensitivity of post-retirement benefit cost to changes in the health care trend rate:  
Sensitivity to Changes in Assumed Health Care Cost Trend Rates  
At September 30, 2012

	1% Increase	1% Decrease	
Effect on total of service and interest cost components	\$7	\$(7	)
Effect on end-of-year accumulated post-retirement benefit obligation	110	(114	)

Each fluctuation above assumes that the other components of the calculation are held constant and excludes any impact for unamortized actuarial gains or losses.

Plan Investments

The qualified defined benefit pension plan, (the "Plan"), which includes the Original Benefit Structure and the Cash Balance Benefit Structure, is the only plan that includes qualified plan assets. TVARS has a long-term investment plan which contains a dynamic de-risking strategy that allocates investments to assets that better match the liability, such as long duration fixed income securities, over time as funding status targets are met. In September 2012, the TVARS Board approved a new initial asset allocation policy. The approved investment allocation policy has targets of 48 percent equity including U.S., non-U.S. and private equity investments, 27 percent fixed income securities, 15 percent public real assets including Treasury Inflation-Protected Securities ("TIPS"), commodities and Master Limited Partnerships ("MLPs"), and 10 percent private real assets. The qualified pension plan assets are invested in equity securities, debt securities, U.S. equities, international equities, private real estate, timber, investment-grade debt, high-yield debt, U.S. Treasury inflation-protected securities, currencies, and derivative instruments such as futures, options, swaps, and forwards. 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, 2012 and 2011, the asset holdings of the system included the following:

Asset Holdings of TVARS

At September 30

Asset Category	Target Allocation	Plan Assets at September 30		
		2012	2011	
Global equity	38	% 47	% 40	%
Private equity	10	% 6	% 6	%
Cash	2	% 1	% 1	%
Core fixed income	5	% 8	% 13	%
Long-term core fixed income	5	% 4	% 4	%
Investment grade credit	5	% 9	% 11	%
High yield fixed income	10	% 10	% 10	%
Global TIPS	5	% 9	% 9	%
Private real assets	10	% 6	% 6	%
Commodities	5	% —	% —	%
MLPs	5	% —	% —	%
Total	100	% 100	% 100	%

Table of Contents

## Fair Value Measurements

The following table provides the fair value measurement amounts for assets held by TVARS at September 30, 2012:

TVA Retirement System  
At September 30, 2012

	Total <sup>(1) (2)</sup>	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Assets</b>				
Equity securities	\$1,294	\$1,293	\$—	\$1
Preferred securities	26	18	3	5
<b>Debt securities</b>				
Corporate debt securities	1,601	—	1,589	12
Residential mortgage-backed securities	390	—	386	4
Debt securities issued by U.S. Treasury and other U.S. government agencies	184	182	2	—
Debt securities issued by foreign governments	46	—	43	3
Asset-backed securities	109	—	95	14
Debt securities issued by state/local governments	46	—	41	5
Commercial mortgage-backed securities	28	—	28	—
<b>Commingled Funds</b>				
Equity	1,129	—	1,129	—
Debt	802	—	802	—
Blended	275	—	275	—
Institutional mutual funds	32	32	—	—
Cash equivalents	311	—	311	—
Private equity funds	519	—	—	519
Private real estate funds	340	—	270	70
Treasury bills, U.S. Government notes and securities held as futures and other derivative collateral	37	5	32	—
Securities lending commingled funds	3	—	3	—
<b>Derivatives</b>				
Foreign currency forward receivable	487	—	487	—
Purchased options	7	—	7	—
<b>Total Assets</b>	<b>\$7,666</b>	<b>\$1,530</b>	<b>\$5,503</b>	<b>\$633</b>
<b>Liabilities</b>				
<b>Derivatives</b>				
Foreign currency forward payable	\$488	\$—	\$488	\$—
Futures	3	3	—	—



Edgar Filing: Tennessee Valley Authority - Form 10-K

Credit default swaps	1	—	1	—
Written option obligations	1	—	1	—
Total Liabilities	\$493	\$3	\$490	\$—

Notes

(1) Excludes approximately \$141 million in net payables associated with security purchases and sales and various other payables.

(2) Excludes a \$3 million payable for collateral on loaned securities in connection with TVARS's participation in securities lending programs.

Table of Contents

The following table provides the fair value measurement amounts for assets held by TVARS at September 30, 2011:

TVA Retirement System  
At September 30, 2011

	Total <sup>(1) (2)</sup>	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Assets</b>				
Equity securities	\$1,045	\$1,045	\$—	\$—
Preferred securities	20	15	—	5
<b>Debt securities</b>				
Corporate debt securities	1,276	—	1,275	1
Residential mortgage-backed securities	455	—	450	5
Debt securities issued by U.S. Treasury and other U.S. government agencies	454	450	4	—
Debt securities issued by foreign governments	35	—	35	—
Asset-backed securities	102	—	93	9
Debt securities issued by state/local governments	40	—	33	7
Commercial mortgage-backed securities	18	—	18	—
<b>Commingled Funds</b>				
Equity	924	—	924	—
Debt	779	—	779	—
Blended	300	—	300	—
Institutional mutual funds	51	51	—	—
Cash equivalents	599	1	598	—
Private equity funds	481	—	—	481
Private real estate funds	326	—	21	305
Treasury bills, U.S. Government notes and securities held as futures and other derivative collateral	57	28	29	—
Securities lending commingled funds	3	—	3	—
<b>Derivatives</b>				
Foreign currency forward receivable	599	—	599	—
Interest rate swaps	4	—	4	—
Purchased options	1	—	1	—
<b>Total Assets</b>	<b>\$7,569</b>	<b>\$1,590</b>	<b>\$5,166</b>	<b>\$813</b>
<b>Liabilities</b>				
<b>Derivatives</b>				
Foreign currency forward payable	\$601	\$—	\$601	\$—
Futures	17	17	—	—
Credit default swaps	5	—	5	—

Edgar Filing: Tennessee Valley Authority - Form 10-K

Written option obligations	3	—	3	—
Total Liabilities	\$626	\$17	\$609	\$—

Notes

(1) Excludes approximately \$394 million in net payables associated with security purchases and sales and various other payables.

(2) Excludes a \$3 million payable for collateral on loaned securities in connection with TVARS's participation in securities lending programs.

Table of Contents

The following table provides a reconciliation of beginning and ending balances of pension plan assets measured at fair value on a recurring basis where the determination of fair value includes significant unobservable inputs (Level 3):  
 Fair Value Measurements Using Significant Unobservable Inputs  
 For the years ended September 30

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at October 1, 2010	\$650
Net realized/unrealized depreciation	30
Purchases, sales, issuances, and settlements (net)	118
Transfers in and/or out of Level 3	15
Balance at September 30, 2011	813
Net realized/unrealized depreciation	85
Purchases, sales, issuances, and settlements (net)	(17 )
Transfers in and/or out of Level 3 <sup>(1)</sup>	(248 )
Balance at September 30, 2012	\$633

## Note

(1) Transfers in and out of Level 3 were due to a change in TVA's policy to classify investments with redemption restriction periods three months or less as level 2, and investments with more restrictive redemption terms are classified as Level 3.

Vendor-provided prices for the Plan's investments are subjected to automated tolerance checks by the trustee to identify and avoid, where possible, the use of inaccurate prices. Any questionable prices identified 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 that 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.

Equities. Investment securities, including common stock and mutual funds, listed on either a national or foreign securities exchange or traded in the over-the-counter national market system are generally valued each business day at the official closing price (typically the last reported sale price) on the exchange on which the security is primarily traded. If there are no current day sales, the securities are valued at their last quoted bid price. Equities priced by an exchange in an active market are classified as Level 1. Equities priced using unobservable inputs are classified as Level 3.

Preferred Securities. Preferred securities are valued at their quoted market price (Level 1 inputs), or in such instances where quoted market prices are unavailable, the fair value is estimated based on yields currently available on comparable securities of issues with similar credit ratings (Level 2 inputs). Certain preferred securities priced used using unobservable inputs have been classified as Level 3.

Corporate Debt Securities. Corporate bonds are valued based upon recent bid prices or the average of recent bid and asked prices when available (Level 2 inputs) and, if not available, they are valued through matrix pricing models developed by sources considered by management to be reliable. Matrix pricing, which is a mathematical technique commonly used to price debt securities that are not actively traded, values debt securities without relying exclusively on quoted prices for the specific securities but rather by relying on the securities' relationship to other benchmark quoted securities (Level 2 inputs). Certain corporate debt securities priced using unobservable inputs have been classified as Level 3.

Residential Mortgage-Backed Securities. Residential mortgage-backed securities consist of collateralized mortgage obligations ("CMOs") and U.S. pass-through security pools related to government-sponsored enterprises ("GSE"). CMO pricing is typically based on either a volatility-driven, multidimensional single cash flow stream model or an option-adjusted spread model. These models incorporate available market data such as trade information, dealer quotes, market color, spreads, bids and offers. Pricing for GSE securities, including the Federal Home Loan Mortgage Corporation, the Federal National Mortgage Association, and the Government National Mortgage Association, is typically based on quotes from the To Be Announced ("TBA") market, which is highly liquid with multiple electronic platforms that facilitate the execution of trading between investors

Table of Contents

and broker/dealers. Prices from the TBA market are then compared against other live data feeds as well as input obtained directly from the dealer community. A tolerance check, adjusted dynamically in response to market conditions, is applied to check for consistency across the trading platforms and dealer quotes. If discrepancies are identified, the data is reviewed to resolve the differences and determine an appropriate evaluation. Residential mortgage-backed securities are considered to be priced using Level 2 inputs because of the nature of their market data-based pricing models with the exception of certain securities priced using unobservable inputs, which are classified as Level 3.

**U.S. Treasury and Agency Securities.** For U.S. Treasury securities, fair values reflect the closing price reported in the active market in which the security is traded (Level 1 inputs). Agency securities are typically priced using evaluated pricing applications and models incorporating U.S. Treasury yield curves. Agency securities are classified as Level 2 because of the nature of their market-data-based pricing models.

**Debt Securities Issued by Foreign Governments.** These include foreign government bonds and foreign government inflation-linked securities. They are typically priced based on proprietary discounted cash flow models, incorporating option-adjusted spread features as appropriate. Debt securities issued by foreign governments are classified as Level 2 because of the nature of their market-data-based pricing models. Debt securities issued by foreign governments priced using unobservable inputs are classified as Level 3.

**Asset-Backed Securities.** Asset-backed securities are typically priced based on a single cash-flow stream model, which incorporates available market data such as trade information, dealer quotes, market color, spreads, bids and offers. Because of the market-data-based nature of such pricing models, asset-backed securities are classified as Level 2. Asset-backed securities priced using unobservable inputs are classified as Level 3.

**Debt Securities Issued by State and Local Governments.** Debt securities issued by state and local governments are typically priced using market-data-based pricing models, and are therefore classified as Level 2. These pricing models incorporate market data such as quotes, trading levels, spread relationships and yield curves, as applicable. Debt securities issued by state and local governments priced using unobservable inputs are classified as Level 3.

**Commercial Mortgage-Backed Securities.** Commercial mortgage-backed securities are typically priced based on a single cash flow stream model which incorporates available market data such as trade information, dealer quotes, market color, spreads, bids, and offers. Because of the market-data-based nature of such pricing models, commercial mortgage-backed securities are classified as Level 2.

**Private Equity Funds.** Private equity limited partnerships and other similar alternative investments are reported at fair value, which is derived by independent appraisals or investment management judgment. The inputs used by the General Partners in estimating the fair value of the limited partnerships include the original transaction prices, recent transactions in the same or similar instruments, completed or pending third-party transactions in the underlying investments or comparable issues, subsequent rounds of financing, recapitalizations and other transactions across the capital structure, offerings in the equity or debt capital markets, and changes in financial ratios or cash flows. These investments may also be adjusted to reflect illiquidity and/or non-transferability, with the amount of such discounts estimated by the General Partners in the absence of market information. Due to the lack of observable inputs, the determination of the fair value by the General Partners may differ materially from the value ultimately realized by the Partnership.

The private equity managers recognize realized gains or losses when they receive income or dispose of an investment. The net realized capital gains or losses, which include management fees and fund expenses, are allocated to the partners in proportion to their commitments. The fair values of the private equity funds are based the valuations provided by the General Partners, with index-based adjustments to non-current valuations. Due to the unobservable

nature of these valuations, private equity funds are classified as Level 3.

The private equity limited partnerships typically make longer-term investments in private companies and seek to obtain financial returns through long-term appreciation based on corporate stewardship, improved operating processes, and financial restructuring, which may involve a merger or acquisition. Significant investment strategies include venture capital; buyout; mezzanine, or subordinate, debt; restructuring or distressed debt; and special situations. Venture capital partnerships consist of two main groupings. Early-stage venture capital partnerships invest in businesses still in the conceptual stage where products may not be fully developed and where revenues and/or profits may be several years away. Later-stage venture capital partnerships invest in more mature companies in need of growth or expansion capital. Buyout partnerships provide the equity capital for acquisition transactions either from a private seller or the public, which may represent the purchase of the entire company or a refinancing or recapitalization transaction where equity is invested. Mezzanine or subordinated debt partnerships provide the intermediate capital between equity and senior debt in a buyout or refinancing transaction and typically own a security in the company that carries current interest payments as well as a potential equity interest in the company. Restructuring or distressed debt partnerships purchase opportunities generated by overleveraged or poorly managed companies. Special situation partnerships include organizations with a specific industry focus not covered by the other private equity subclasses or unique opportunities that fall outside the regular subclasses.

Table of Contents

Private Real Estate Funds. The Plan's ownership in the private real estate investments consists of a pro rata share and not a direct ownership of the underlying investments. The fair values of the Plan's private real estate investments are estimated utilizing net asset values provided by the investment managers. The methodologies utilized by the investment managers to calculate their net asset values are summarized as follows:

The Plan is invested in limited partnerships that invest in real estate securities, real estate partnerships, and in direct real estate properties. This includes investments in office, multifamily, industrial, and retail investment properties in the U.S. and international markets. The investment strategy focuses on distressed, opportunistic, and value added opportunities. Partnership investments also include mortgage and/or real estate-related fixed-income instruments and related securities. Investments are diversified by property type and geographic location.

The Plan is invested in a commingled fund that develops, renovates, and re-leases real estate properties to create value. Investments are predominately in top tier real estate markets that offer deep liquidity. Property types include residential, office, industrial, hotel, retail, and land. Properties are diversified by geographic region within the U.S. domestic market. The Plan is invested in a second commingled fund that invests primarily in core, well-leased, operating real estate properties with a focus on income generation. Investments are diversified by property type with a focus on office, industrial, apartment, and retail. Properties are diversified within the U.S. with an overweight to major market and coastal regions.

Fair value estimates of the underlying investments in these limited partnerships and commingled fund investments are primarily based upon property appraisal reports prepared by independent real estate appraisers within a reasonable amount of time following acquisition of the real estate and no less frequently than annually thereafter. The appraisals are based on one or a combination of three methodologies: cost of reproduction analysis, discounted cash flow analysis and sales comparison analysis. Pricing for certain investments in mortgage-backed and asset-backed securities is typically based on models that incorporate observable inputs.

The Plan is invested in a private real estate investment trust formed to make direct or indirect investments in commercial timberland properties. Pricing for these types of investments is based on comprehensive appraisals that are conducted shortly after initial purchase of properties and at three-year intervals thereafter. All appraisals are conducted by third-party timberland appraisal firms. Appraisals are based on either a sales comparison analysis or a discounted cash flow analysis.

The fair value hierarchy level classifications for the Plan's real estate investments are determined based on redemption terms. Investments which cannot be redeemed at the measurement date, but which can be redeemed at a future date, are evaluated based on the length of time until the investment will become redeemable in determining whether the investment should be reported in either Level 2 or Level 3 of the fair value hierarchy. Generally, investments which allow redemptions quarterly or more frequently are classified as Level 2, and investments with more restrictive redemption terms are classified as Level 3.

Derivatives. The Plan invests in a variety of derivative instruments. The valuation methodologies for these instruments are as follows:

Futures. The Plan enters into equity futures, foreign currency futures and interest rate futures. The futures contracts are listed on either a national or foreign securities exchange and generally valued each business day at the official closing price (typically the last reported sales price) on the exchange on which the security is primarily traded. The pricing is performed by third-party vendors. Since futures are priced by an exchange in an active market, they are classified as Level 1.



Options. The Plan enters into interest rate options, foreign currency options and fixed income options. Options that are listed on either a national or foreign securities exchange are generally valued each business day at the official closing price (typically the last reported sales price) on the exchange on which the security is primarily traded. These options are classified as Level 1 and include both written and purchased options on Treasury note futures and Eurodollar futures. Options traded over the counter and not in exchanges are priced by third-party vendors and are classified as Level 2. This includes both written and purchased options on interest rate swaps.

Swaps. The Plan enters into various types of swaps. Credit default swaps are priced at market using models that consider cash flows, credit curves, recovery rates and other factors. The pricing is performed by third-party vendors. Interest rate swap contracts are priced at market using forward rates derived from the swap curve, and the pricing is also performed by third-party vendors. Other swaps such as currency swaps and total return swaps are priced by third-party vendors using market inputs such as spot rates and yield curves. These swaps are classified as Level 2 due to the observable inputs which are incorporated into their pricing models.

Foreign currency forwards. The Plan enters into foreign currency forwards. All commitments are marked to market daily at the applicable translation rates, and any resulting unrealized gains or losses are recorded. Foreign currency forwards are priced by third-party vendors and are classified as Level 2 due to the market-based nature of their pricing inputs.

Commingled Funds. The Plan invests in commingled funds, which include collective trusts, unit investment trusts, and similar investment funds that predominantly hold debt and/or equity securities as underlying assets. The Plan's ownership

## Table of Contents

consists of a pro rata share and not a direct ownership of an underlying investment. These commingled funds are valued at their closing net asset values (or unit value) per share as reported by the managers of the commingled funds and as supported by the unit prices of actual purchases and sale transactions occurring as of or close to the financial statement date (Level 2 inputs).

The Plan is invested in equity commingled funds, which can be categorized as either passively-managed index funds or actively-managed funds. The equity index funds seek to track the performance of a particular index by replicating its capitalization and characteristics. Passive fund benchmark indices include the Russell 1000 index and the Morgan Stanley Capital International All Country World Index ex-U.S. The actively managed equity funds seek to outperform certain equity benchmarks through a combination of fundamental and technical analysis. Active funds select portfolio positions based upon their research.

The Plan is invested in debt commingled funds, which can be categorized as either passively managed index funds or actively managed funds. The plan's debt index fund invests in a diversified portfolio of fixed-income securities and derivatives of varying maturities to replicate the characteristics of the Barclays Capital U.S. Aggregate Bond index. The fund seeks to track the total return of the Barclays Capital U.S. Aggregate Bond Index. The actively managed debt funds seek to outperform certain fixed-income benchmarks through fundamental research and analysis. The funds invest in a diversified portfolio of fixed income securities and derivatives of varying maturities. The objective is to achieve a positive relative total return through active credit selection.

The Plan is invested in commingled funds, which invest across multiple asset classes that can be categorized as blended. These funds seek to outperform a passive benchmark through active security selection. The funds invest in securities across equity, fixed income, currency and commodities. The portfolios employ fundamental, quantitative and technical analysis.

The Plan's investments in equity, debt and blended commingled funds can generally be redeemed at any time upon notification of the investment managers, with required notice periods varying from same-day to monthly. These investments do not have unfunded commitments.

**Institutional Mutual Funds.** Participation units of institutional mutual funds are stated at their quoted redemption values as reported by the investment managers based on their net asset values, which reflect the fair values of the underlying investments. These funds are traded at published net asset values in an active market (Level 1 inputs).

**Cash Equivalents and Other Short-Term Investments.** Cash equivalents and other short-term investments are highly liquid securities with a maturity of less than three months and 12 months respectively. These consist primarily of U.S. Treasury securities, residential mortgage-backed securities, commercial paper, corporate bonds, asset-backed securities and certificates of deposit. U.S. Treasury securities are priced based on Level 1 inputs as described above. The other types of cash equivalent securities and other short-term investments, as described above, are priced using models that incorporate market-based inputs and are therefore classified as Level 2.

The valuation methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while TVA believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

## Cash Flows

Edgar Filing: Tennessee Valley Authority - Form 10-K

Estimated Future Benefit Payments. The following table sets forth the estimated future benefit payments under the benefit plans.

Estimated Future Benefits Payments

At September 30, 2012

	Pension Benefits	Other Post-Retirement Benefits
2013	\$726	\$38
2014	716	40
2015	716	42
2016	718	44
2017	722	46
2018 - 2022	3,630	228

Contributions. In 2012, TVA made contributions of \$8 million to the SERP and \$41 million to the other post-retirement benefit plans. TVA expects to contribute \$6 million to the SERP and \$38 million to the other post-retirement benefit plans in 2013. In 2009 TVA entered into an agreement with TVARS resulting in TVA prefunding annual contributions through 2013 for a

Table of Contents

total of \$1.0 billion. As a result, TVA does not plan to contribute to the qualified defined benefit pension plan in 2013. In 2011, TVA made an additional discretionary contribution of \$270 million due, in large part, to poor market returns during that year. In 2012, the qualified defined pension plan's assets exceeded market return expectations and no discretionary contribution was made.

## Other Post-Employment Benefits

Post-employment benefit cost estimates are revised to properly reflect changes in actuarial assumptions made at the end of each year. TVA utilizes a discount rate determined by reference to the U.S. Treasury Constant Maturities corresponding to calculated average durations of TVA's future estimated post-employment claims payments. The use of a 1.65 percent discount rate resulted in the recognition of approximately \$52 million in expenses in 2012 and an unpaid benefit obligation of about \$597 million at September 30, 2012. The current portion of the obligation is \$53 million and is recorded in Accounts payable and accrued liabilities. The long-term portion of \$544 million is recorded in Post-retirement and post-employment benefit obligations. TVA utilized discount rates of 1.92 percent and 2.53 percent in 2011 and 2010, respectively. The use of these discount rates resulted in expense and unpaid benefit obligations of \$81 million and \$596 million, respectively, for 2011 and expense and unpaid benefit obligations of \$141 million and \$570 million, respectively, for 2010.

While the 2012 discount rate increased the expense for 2012, the overall expense decreased for 2012 in comparison to 2011. The decrease in expense is primarily due to the improvement in TVA's loss experience and the 2012 discount rate dropping only 27 basis points in comparison to the 2011 discount rate dropping 61 basis points from the 2010 discount rate. In 2010, TVA made changes in the actuarial methods and assumptions for the September 30, 2010 actuarial valuation for other post-employment benefits. These changes stemmed from review of and recognition of developing trends in TVA's post-employment claims experience. The result of the changes and the decrease in the discount rate increased both the expense and unpaid benefit obligation for 2010.

## 20. Commitments and Contingencies

## Commitments

At September 30, 2012, the amounts of contractual cash commitments maturing in each of the next five years and beyond are shown below:

## Commitments and Contingencies

Payments due in the year ending September 30

	2013	2014	2015	2016	2017	Thereafter	Total
Debt <sup>(1)</sup>	\$3,815	\$32	\$1,032	\$32	\$1,555	\$17,638	\$24,104
Debt of VIEs	13	13	14	15	16	923	994
Lease obligations							
Capital	2	2	2	2	2	25	35
Non-cancelable operating	62	39	26	25	25	124	301
Purchase obligations							
Power	161	156	156	168	169	3,501	4,311
Fuel	1,441	1,105	1,063	672	366	2,466	7,113
Other	164	158	142	140	129	1,185	1,918
Payments on other financings	489	100	104	104	104	505	1,406

Edgar Filing: Tennessee Valley Authority - Form 10-K

Total	\$6,147	\$1,605	\$2,539	\$1,158	\$2,366	\$26,367	\$40,182
-------	---------	---------	---------	---------	---------	----------	----------

Note

(1) Does not include noncash items of foreign currency exchange loss of \$41 million and net discount on sale of Bonds of \$61 million.

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

Energy Prepayment Obligations

	2013	2014	2015	2016	2017	Thereafter	Total
Energy Prepayment Obligations	\$102	\$100	\$100	\$100	\$100	\$110	\$612

137

---

## Table of Contents

Debt. At September 30, 2012, TVA had outstanding discount notes of \$1.5 billion and long-term debt (including current maturities) at varying maturities and interest rates of \$22.6 billion for total outstanding indebtedness of \$24.1 billion. See Note 12.

Debt of VIEs. At September 30, 2012, TVA had outstanding long-term debt (including current maturities) for its two VIEs of which it is the primary beneficiary of \$994 million. See Note 8.

Leases. TVA leases certain property, plant, and equipment under agreements with terms ranging from one to 80 years. Of the total obligations for TVA's capital leases, \$10 million represents the cost of financing. TVA's rental expense for operating leases was \$67 million in 2012, \$77 million in 2011, and \$57 million in 2010.

Power Purchase Obligations. TVA has contracted with various independent power producers and power distributor customers for additional capability to be made available to TVA. In total, these agreements provide 1,222 MW of summer net capability. The remaining terms of the agreements range from 3 months to 20 years. TVA spent \$447 million, \$713 million, and \$504 million under power purchase agreements during 2012, 2011, and 2010, respectively. Costs under TVA's power purchase agreements are included in TVA's consolidated statements of operations as purchased power expense and are expensed as incurred.

Under federal law, TVA is obligated to purchase power from qualifying facilities, cogenerators, and small power producers. At September 30, 2012, there was a combined qualifying capacity of 918 MW, from eight different suppliers, from which TVA purchased power under this law. TVA's obligations to purchase power from these qualifying facilities are not included in the Commitments and Contingencies table.

TVA, along with others, contracted with the Southeastern Power Administration ("SEPA") to obtain power from eight U.S. Army Corps of Engineers hydroelectric facilities on the Cumberland River system. The agreement with SEPA can be terminated upon three years' notice, but this notice of termination may not become effective prior to June 30, 2017. The contract requires SEPA to provide TVA an annual minimum of 1,500 hours of power for each megawatt of TVA's 405 MW allocation, and all surplus power from the Cumberland River system. Because hydroelectric production has been reduced at two of the hydroelectric facilities on the Cumberland River system and because of reductions in the summer stream flow on the Cumberland River, SEPA declared "force majeure" on February 25, 2007. SEPA then instituted an emergency operating plan that, among other things, eliminates SEPA's obligation to provide TVA and other affected customers with a minimum amount of power. It is unclear how long the emergency operating plan will remain in effect. TVA's obligations under its contract with SEPA are not included in the Commitments and Contingencies table.

Fuel Purchase Obligations. TVA has approximately \$2.8 billion in long-term fuel purchase commitments ranging in terms of up to 11 years primarily for the purchase and transportation of coal. TVA also has approximately \$4.3 billion of long-term commitments ranging in terms of up to 19 years for the purchase of enriched uranium and fabrication of nuclear fuel assemblies.

Other Obligations. Other obligations of \$1.9 billion consist of contracts at September 30, 2012, for goods and services primarily related to capital projects as well as other major recurring operating costs.

## Contingencies

Nuclear Insurance. The Price-Anderson Act provides a layered framework of protection to compensate for losses arising from a nuclear event in the United States. For the first layer, all of the NRC nuclear plant licensees, including TVA, purchase \$375 million of nuclear liability insurance from American Nuclear Insurers for each plant with an

operating license. Funds for the second layer, the Secondary Financial Program, would come from an assessment of up to \$118 million from the licensees of each of the 104 NRC licensed reactors in the United States. The assessment for any nuclear accident would be limited to \$18 million per year per unit. American Nuclear Insurers, under a contract with the NRC, administers the Secondary Financial Program. With its six licensed units, TVA could be required to pay a maximum of \$705 million per nuclear incident, but it would have to pay no more than \$105 million per incident in any one year. When the contributions of the nuclear plant licensees are added to the insurance proceeds of \$375 million, over \$12.0 billion, including a five percent surcharge for legal expenses, would be available. Under the Price-Anderson Act, if the first two layers are exhausted, the U.S. Congress is required to take action to provide additional funds to cover the additional losses.

TVA carries property, decommissioning, and decontamination insurance of \$4.6 billion for its licensed nuclear plants, with up to \$2.1 billion available for a loss at any one site, to cover the cost of stabilizing or shutting down a reactor after an accident. Some of this insurance, which is purchased from Nuclear Electric Insurance Limited ("NEIL"), may require the payment of retrospective premiums up to a maximum of approximately \$109 million.

TVA purchases accidental outage (business interruption) insurance for TVA's nuclear sites from NEIL. In the event that an accident covered by this policy takes a nuclear unit offline or keeps a nuclear unit offline, NEIL will pay TVA, after a waiting period, an indemnity (a set dollar amount per week) up to a maximum indemnity of \$490 million per unit. This insurance policy

Table of Contents

may require the payment of retrospective premiums up to a maximum of approximately \$31 million.

**Decommissioning Costs.** TVA recognizes legal obligations associated with the future retirement of certain tangible long-lived assets related primarily to coal-fired generating plants and nuclear generating plants, hydroelectric generating plants/dams, transmission structures, and other property-related assets.

**Nuclear.** Provision for decommissioning costs of nuclear generating units is based on options prescribed by the NRC procedures to dismantle and decontaminate the facilities to meet the NRC criteria for license termination. At September 30, 2012, the present value under GAAP of the estimated future decommissioning cost of \$2.2 billion was included in AROs. The actual decommissioning costs may vary from the derived estimates because of, among other things, changes in current assumptions, such as the assumed dates of decommissioning, changes in regulatory requirements, changes in technology, and changes in the cost of labor, materials, and equipment. Utilities that own and operate nuclear plants are required to use different procedures in calculating nuclear decommissioning costs under GAAP than those that are used in calculating nuclear decommissioning costs when reporting to the NRC. The two sets of procedures produce different estimates for the costs of decommissioning primarily because of the difference in the discount rates used to calculate the present value of decommissioning costs.

TVA maintains a NDT to provide funding for the ultimate decommissioning of its nuclear power plants. The balance at September 30, 2012, was less than the present value of the estimated future nuclear decommissioning costs under the NRC methodology and under GAAP. TVA monitors the monetary value of its NDT and believes that, over the long term and before cessation of nuclear plant operations and commencement of decommissioning activities, adequate funds from investments will be available to support decommissioning. TVA's nuclear power units are currently authorized to operate until 2020-2036, depending on the unit. It may be possible to extend the operating life of some of the units with approval from the NRC. See Note 7 — Nuclear Decommissioning Costs and Note 11.

**Non-Nuclear Decommissioning.** The present value of the estimated future non-nuclear decommissioning cost was \$1.1 billion at September 30, 2012. 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. The actual decommissioning costs may vary from the derived estimates because of changes in current assumptions, such as the assumed dates of decommissioning, changes in regulatory requirements, changes in technology, and changes in the cost of labor, materials, and equipment.

TVA maintains an ART to help fund the ultimate decommissioning of its power assets. Estimates involved in determining if additional funding will be made to the ART include inflation rate and rate of return projections on the fund investments. See Note 7 — Non-Nuclear Decommissioning Costs and Note 11.

**Environmental Matters.** TVA's power generation activities, like those across the utility industry and in other industrial sectors, are subject to most federal, state, and local environmental laws and regulations. Major areas of regulation affecting TVA's activities include air quality control, water quality control, and management and disposal of solid and hazardous wastes. In the future, regulations in all of these areas are expected to become more stringent. Regulations are also expected to apply to new emissions and sources, with a particular emphasis on climate change, renewable generation, and energy efficiency.

TVA has incurred, and expects to continue to incur, substantial capital and operating and maintenance costs to comply with evolving environmental requirements primarily associated with, but not limited to, the operation of TVA's coal-fired generating units. It is virtually certain that environmental requirements placed on the operation of TVA's coal-fired and other generating units will continue to become more restrictive and potentially apply to new emissions



and sources. Litigation over emissions from coal-fired generating units is also occurring, including litigation against TVA. Failure to comply with environmental and safety laws can result in TVA being subject to enforcement actions, which can lead to the imposition of significant civil liability, including fines and penalties, criminal sanctions, and/or the shutting down of non-compliant facilities.

From 1977 to 2012, TVA spent approximately \$5.4 billion to reduce emissions from its power plants, including \$38 million, \$34 million, and \$58 million in 2012, 2011, and 2010, respectively. TVA estimates that compliance with future Clean Air Act ("CAA") requirements (excluding greenhouse gas ("GHG") requirements) could lead to additional costs of \$2.3 billion from 2013 to 2018. There could be additional material costs if reductions of GHGs, including carbon dioxide ("CO<sub>2</sub>"), are mandated under the CAA or by legislation, or if future legislative, regulatory, or judicial actions lead to more stringent emission reduction requirements for conventional pollutants. These costs cannot reasonably be predicted at this time because of the uncertainty of such potential actions.

Liability for releases and cleanup of hazardous substances is primarily regulated by the federal Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), and other federal and parallel state statutes. In a manner similar to many other industries and power systems, TVA has generated or used hazardous substances over the years.

## Table of Contents

TVA is aware of alleged hazardous-substance releases at certain non-TVA areas for which it may have some liability. Although there is little or no known evidence that TVA contributed any significant quantity of hazardous substances to most of the non-TVA areas, there is evidence that TVA sent some materials to Ward Transformer, a non-TVA site in Raleigh, North Carolina. The Ward Transformer site is contaminated by PCBs from electrical equipment. There is documentation showing that TVA sent a limited amount of electrical equipment containing PCBs to the site in 1974. A working group of potentially responsible parties (the "PRP Work Group") is cleaning up on-site contamination in accordance with an agreement with the EPA. The cleanup effort has been divided into four areas: two phases of soil cleanup; cleanup of off-site contamination in the downstream drainage basin; and supplemental groundwater remediation. The cost estimate for the first phase of soil cleanup is approximately \$55 million. The cost estimate for the second phase of soil cleanup is \$10 million. Estimates for cleanup of off-site contamination in the downstream drainage basin range from \$6 million to \$25 million. There are no reliable estimates for the supplemental groundwater remediation phase. On April 30, 2009, the PRP Work Group filed an amended complaint in federal court against potentially responsible parties who had not yet settled, including TVA, regarding the two phases of soil cleanup. TVA settled this lawsuit and its potential liability for the two phases of soil cleanup for \$300 thousand and has been dismissed as a party. Although the settlement with respect to the first two phases does not prohibit TVA from having liability in connection with the other two phases or any natural resource damages, the U.S. Department of Justice is attempting to negotiate a government-wide settlement of the liability of all federal agencies (including TVA) for cleanup of offsite contamination in the downstream drainage basin and the investigative portion of the supplemental groundwater remediation. TVA believes that its liability for the remaining two phases and natural resource damages is less than \$1 million.

TVA operations at some TVA facilities have resulted in oil spills and other contamination that TVA is addressing. At September 30, 2012, TVA's estimated liability for cleanup and similar environmental work for those sites for which sufficient information is available to develop a cost estimate (primarily the TVA sites) was approximately \$11 million on a non-discounted basis and was included in Accounts payable and accrued liabilities and Other long-term liabilities on the Balance Sheet.

## Legal Proceedings

From time to time, TVA is party to or otherwise involved in lawsuits, claims, proceedings, investigations, and other legal matters ("Legal Proceedings") that have arisen in the ordinary course of conducting TVA's activities, as a result of a catastrophic event or otherwise.

General. TVA had accrued approximately \$354 million of potential losses with respect to Legal Proceedings at September 30, 2012. Of this amount, \$237 million is included in Other long-term liabilities, \$107 million is included in Accounts payable and accrued liabilities, and \$10 million is included in Regulatory assets. TVA is currently unable to estimate any amount or any range of amounts of reasonably possible losses in excess of the established accruals, but 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.

Environmental Agreements. In April 2011, TVA entered into two substantively similar agreements, one with the EPA and the other with Alabama, Kentucky, North Carolina, Tennessee, and three environmental advocacy groups: the Sierra Club, National Parks Conservation Association, and Our Children's Earth Foundation (collectively, the "Environmental Agreements"). They became effective in June 2011. Under the Environmental Agreements, TVA committed to (1) retire on a phased schedule 18 coal-fired units with a combined summer net dependable capability of 2,200 MW, (2) control, convert, or retire additional coal-fired units with a combined summer net dependable capability of 3,500 MW, (3) comply with annual, declining emission caps for SO<sub>2</sub> and NO<sub>x</sub>, (4) invest \$290 million in certain TVA environmental projects, (5) provide \$60 million to Alabama, Kentucky, North Carolina, and Tennessee to

fund environmental projects, and (6) pay civil penalties of \$10 million. In exchange for these commitments, most existing and possible claims against TVA based on alleged New Source Review and associated violations were waived and cannot be brought against TVA. Some possible claims for sulfuric acid mist and GHG emissions can still be brought against TVA, and claims for increases in particulates can also be pursued at many of TVA's coal-fired units. Additionally, the Environmental Agreements do not address compliance with new laws and regulations or the cost associated with such compliance.

The liabilities related to the Environmental Agreements are included in Accounts payable and accrued liabilities and Other long-term liabilities on the September 30, 2012 Consolidated Balance Sheet. In conjunction with the approval of the Environmental Agreements, the TVA Board determined that it was appropriate to record TVA's liabilities under the Environmental Agreements as regulatory assets, and they are included as such on the September 30, 2012 Consolidated Balance Sheet and will be recovered in rates in future periods.

Several legal and administrative clean air proceedings have already been terminated in connection with the Environmental Agreements. Additionally, the proceedings discussed below involving the John Sevier CAA permit is expected to be narrowed in scope.

Legal Proceedings Related to the Kingston Ash Spill. Seventy-eight lawsuits based on the Kingston ash spill have been filed in the United States District Court for the Eastern District of Tennessee. Fifteen of these lawsuits have been dismissed, and 63 lawsuits are active and in various stages of litigation. Plaintiffs are residents, businesses, and property owners in the Kingston area and allege tort claims for damage to property (for example, nuisance, strict liability, trespass, and

Table of Contents

negligence), with some plaintiffs also alleging claims for personal injury, business loss, and inverse condemnation. Plaintiffs seek unspecified compensatory and punitive damages, court orders to clean up properties and other relief. TVA is the only active defendant in these actions.

A bench trial on the issue of dike failure causation in the seven earliest cases was held in September and October 2011 ("Phase I trial"). Plaintiffs in the 56 remaining cases have agreed to be bound by the Phase I trial record and decision. In August 2012, the court issued its Phase I decision, finding that certain actions by TVA contributed to the ash spill. The case will now proceed to the damages phase ("Phase II") trial, during which the individual plaintiffs must prove both that they incurred damages and that the ash spill was the cause of the damages. The date for the Phase II trial has not yet been set.

TVA has received several notices of intent to sue under various environmental statutes from both individuals and environmental groups, but no such suits have been filed.

**Civil Penalty and Natural Resource Damages for the Kingston Ash Spill.** In June 2010, TDEC issued a civil penalty order of approximately \$12 million to TVA for the Kingston ash spill, citing violations of the Tennessee Solid Waste Disposal Act and the Tennessee Water Quality Control Act. Of the \$12 million, TVA has satisfied \$10 million, and TDEC has approved environmental projects valued at \$2 million as a credit against the penalty amount. In January 2011, TVA entered into 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 damage claim associated with the Kingston ash spill. As part of this memorandum of agreement, TVA agreed to pay \$250 thousand each year for three years as a down payment on the amount of natural resource damages ultimately established, and to reimburse TDEC and the U.S. Fish and Wildlife Service for their costs.

**Case Involving Tennessee Valley Authority Retirement System.** In March 2010, eight current and former participants in and beneficiaries of the TVARS filed suit in the United States District Court for the Middle District of Tennessee against the six then-current members of the TVARS Board. The lawsuit challenged the TVARS Board's decision to suspend the TVA contribution requirements for 2010 through 2013, and to amend the TVARS Rules and Regulations to (1) reduce the calculation for COLA benefits for CY 2010 through CY 2013, (2) reduce the interest crediting rate for the fixed fund accounts, and (3) increase the eligibility age to receive COLAs from age 55 to 60. The plaintiffs allege that these actions violated the TVARS Board members' fiduciary duties to the plaintiffs (and the purported class) and the plaintiffs' contractual rights, among other claims. The plaintiffs sought, among other things, unspecified damages, an order directing the TVARS Board to rescind the amendments, and the appointment of a seventh TVARS Board member. Five of the six individual defendants filed motions to dismiss the lawsuit, while the remaining defendant filed an answer to the complaint. In July 2010, TVA moved to intervene in the suit in the event it was not dismissed. In September 2010, the district court dismissed the breach of fiduciary duty claim against the directors without prejudice, allowing the plaintiffs to file an amended complaint within 14 days against TVARS and TVA but not the individual directors. The plaintiffs previously had voluntarily withdrawn their constitutional claims, so the court also dismissed those claims without prejudice. The court dismissed with prejudice the plaintiffs' claims for breach of contract, violation of the Internal Revenue Code, and appointment of a seventh TVARS Board member.

In September 2010, the plaintiffs filed an amended complaint against TVARS and TVA. The plaintiffs allege, among other things, violations of their constitutional rights (due process, equal protection, and property rights), violations of the Administrative Procedure Act, and breach of statutory duties owed to the plaintiffs. They seek a declaratory judgment and appropriate relief for the alleged statutory and constitutional violations and breaches of duty. TVA filed its answer to the amended complaint in December 2010. In May 2012, the court granted the parties' joint motion to administratively close the case subject to reopening to allow the parties the opportunity to engage in mediation that will likely take a significant amount of time to complete. The parties have agreed to a mediator and are proceeding with mediation. The mediation will take place over a series of meetings and began in September 2012.

Case Arising out of Hurricane Katrina. In April 2006, TVA was added as a defendant to a class action lawsuit brought in the United States District Court for the Southern District of Mississippi by 14 Mississippi residents allegedly injured by Hurricane Katrina. The plaintiffs sued seven large oil companies and an oil company trade association, three large chemical companies and a chemical trade association, and 31 large companies involved in the mining and/or burning of coal, alleging that the defendants' GHG emissions contributed to global warming and were a proximate and direct cause of Hurricane Katrina's increased destructive force. Action by the United States Supreme Court in January 2011 ended this case in a manner favorable to TVA.

However, in May 2011, under a Mississippi state statute that permits the re-filing of lawsuits that were dismissed on procedural grounds, the plaintiffs filed another lawsuit in the United States District Court for the Southern District of Mississippi against the same and additional defendants, again alleging that the defendants' GHG emissions contributed to global warming and were a proximate and direct cause of Hurricane Katrina's increased destructive force. The court dismissed the lawsuit in March 2012 for a variety of reasons, including that the lawsuit presented a non-justiciable political question and that all of the claims were preempted by the CAA. The plaintiffs have appealed the dismissal to the United States Court of Appeals for the Fifth Circuit.

Global Warming Cases, Southern District of New York. In July 2004, two lawsuits were filed in the United States District Court for the Southern District of New York against TVA and other companies that generate power from fossil-fuel electric generating facilities. The plaintiffs alleged that CO<sub>2</sub> emissions from such facilities should be ordered abated because they

Table of Contents

contributed to global warming. In September 2005, the district court dismissed both lawsuits because they raised political questions that should not be decided by the courts. Following appellate proceedings, the United States Supreme Court issued a decision in June 2011 that any federal common law cause of action was displaced by the CAA and its implementing regulations. The Supreme Court did not address the plaintiffs' state law claims, but instead remanded the case. The district court entered orders in December 2011 dismissing the federal common law claims in both lawsuits. In December 2011, the plaintiffs voluntarily dismissed the state law claims, ending the lawsuits in a manner favorable to TVA.

Case Involving the NRC Waste Confidence Decision on Spent Nuclear Fuel Storage. In June 2012, the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") vacated the NRC's updated Waste Confidence Decision ("WCD"). The WCD is a generic determination by the NRC that spent nuclear fuel can be safely managed until a permanent off-site repository is established and has been a key component of the NRC licensing activities since 1984. The most recent update provided that the permanent repository would be available when necessary and that spent fuel could be stored for 60 years after a plant's license terminated. The D.C. Circuit vacated this update on the grounds that, among other things, the NRC failed to support it with an adequate National Environmental Policy Act review and the NRC did not evaluate what would happen if the repository was never built.

In June 2012, multiple intervenor groups submitted a petition to the NRC to (a) hold in abeyance all pending reactor licensing decisions that would depend upon the WCD and (b) establish a process for ensuring that the remanded proceeding complies with the public participation requirements of Section 189a of the Atomic Energy Act. In August 2012, the NRC issued an order (the "August NRC Order") suspending all proceedings affected by the petitions, including Watts Bar Unit 2 and Bellefonte Units 3 and 4. The NRC stated that it will not issue final licensing decisions until it has "appropriately addressed" the D.C. Circuit decision and all pending contentions on this topic should be held in abeyance. The NRC has not yet determined an approach to addressing the D.C. Circuit's remand.

Case Regarding Bellefonte Nuclear Plant Units 1 and 2. In March 2009, in response to a request by TVA, the NRC reinstated the construction permits for Bellefonte Units 1 and 2. Blue Ridge Environmental Defense League ("BREDL") subsequently filed petitions in the D.C. Circuit challenging the NRC's authority to reinstate the construction permits. TVA asked to participate and was granted intervenor status in the cases. In July 2010, the D.C. Circuit consolidated the two BREDL petitions and stayed the combined proceeding pending the conclusion of an administrative proceeding which raised several contentions regarding the reinstatement, including some related to the NRC's legal authority to reinstate the permits. The administrative proceeding was completed in September 2010, with the dismissal of all of BREDL's contentions. The D.C. Circuit returned the cases to the court's active docket and decided in February 2012 that BREDL's petitions failed to properly challenge the NRC's final orders reinstating the construction permits, and dismissed the petitions for lack of jurisdiction.

Administrative Proceedings Regarding Bellefonte Units 3 and 4. TVA submitted its combined construction and operating license application ("CCOLA") for two Advanced Passive 1000 reactors at Bellefonte Units 3 and 4 to the NRC in October 2007. In June 2008, Bellefonte Efficiency and Sustainability Team ("BEST"), BREDL, and Southern Alliance for Clean Energy ("SACE") submitted a joint petition for intervention and a request for a hearing. The Atomic Safety and Licensing Board ("ASLB") denied standing to BEST and admitted four of the 20 contentions submitted by BREDL and SACE. The NRC reversed the ASLB's decision to admit two of the four contentions, leaving only two contentions (concerning the estimated costs of the new nuclear plant and the impact of the facility's operations on aquatic ecology) to be litigated in a future hearing. In January 2012, TVA notified the ASLB that the NRC had placed the CCOLA in "suspended" status indefinitely at TVA's request, and TVA requested that the ASLB hold the proceeding in abeyance pending a decision by TVA regarding the best path forward with regards to the CCOLA.

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

In August 2011, BREDL and SACE petitioned for the admission of a new, late-filed contention to require the environmental analysis completed for the CCOLA to consider the findings of the NRC's Near-Term Task Force regarding the Fukushima events. TVA opposed this petition and in November 2011, the ASLB determined that the proposed contention failed to meet the standards for admission of a new contention in the proceeding.

In July 2012, BREDL petitioned for the admission of another new, late-filed contention stemming from the D.C. Circuit's order vacating the NRC's Waste Confidence Decision. This contention is being held in abeyance pursuant to the August NRC Order.

Administrative Proceedings Regarding Watts Bar Nuclear Plant Unit 2. In July 2009, SACE, the Tennessee Environmental Council, the Sierra Club, We the People, and BREDL filed a request for a hearing and petition to intervene in the NRC administrative process reviewing TVA's application for an operating license for Watts Bar Unit 2. In November 2009, the ASLB granted SACE's request for hearing, admitted two of SACE's seven contentions for hearing, and denied the request for hearing submitted on behalf of the other four petitioners. The ASLB subsequently dismissed one contention, leaving one aquatic impact contention. In November 2011, TVA filed a motion for summary disposition, arguing that additional aquatic studies conducted by TVA indicate there is no longer a genuine issue of material fact in connection with SACE's remaining aquatic impact contention. SACE and the NRC staff filed their answers to the motion in December 2011; SACE opposed TVA's motion while the NRC staff supported it. In March 2012, the ASLB denied TVA's motion, and TVA anticipates that a hearing on the matter will likely be held in 2013.

Table of Contents

In August 2011, SACE petitioned for the admission of a new, late-filed contention similar to that filed in the Bellefonte Units 3 and 4 proceeding to require an environmental analysis to be completed for TVA's operating license application to consider the findings of the NRC's Near-Term Task Force regarding the events at the Fukushima Daiichi reactors. TVA submitted a reply brief in September 2011 opposing the petition because it did not satisfy the standards for non-timely contentions or for admitting a new contention. In March 2012, the ASLB denied SACE's motion to admit the new contention.

In July 2012, SACE petitioned for the admission of another new, late-filed contention, similar to the one filed in the Bellefonte Units 3 and 4 proceeding, stemming from the D.C. Circuit's order vacating the NRC's Waste Confidence Decision. This contention is being held in abeyance pursuant to the August NRC Order.

John Sevier Fossil Plant Clean Air Act Permit. In September 2010, the Environmental Integrity Project, the Southern Environmental Law Center, and the Tennessee Environmental Council filed a petition with the EPA, requesting that the EPA Administrator object to the CAA permit issued to TVA for operation of John Sevier. Among other things, the petitioners allege that repair, maintenance, or replacement activities undertaken at John Sevier Unit 3 in 1986 triggered the Prevention of Significant Deterioration ("PSD") requirements for SO<sub>2</sub> and NO<sub>x</sub>. The CAA permit, issued by TDEC, remains in effect pending the disposition of the petition. The Environmental Agreements should narrow the scope of this proceeding. See Environmental Agreements.

Shawnee Fossil Plant ("Shawnee") Clean Air Act Permit. In December 2010, the Environmental Integrity Project and SACE filed a petition with the EPA requesting that the EPA Administrator object to the proposed CAA renewal permit issued to TVA for operations at Shawnee. Among other things, the petitioners allege that repair, maintenance, or replacement undertaken at Shawnee Units 1 and 4 in the 1989-90 period triggered the PSD requirements for SO<sub>2</sub> and NO<sub>x</sub>. The current permit remains in effect pending KDAQ's finalization of the renewal permit. The EPA dismissed this petition in August 2012.

Kingston NPDES Permit Appeal. The Sierra Club filed a challenge to the National Pollutant Discharge Elimination System ("NPDES") permit issued by Tennessee for the scrubber-gypsum pond discharge at Kingston in November 2009 before the Tennessee Water Quality Control Board ("TWQCB"). In addition to its allegation that Tennessee violated the Clean Water Act by failing to set specific limits on certain toxic discharges, the Sierra Club alleges that no discharges from the pond infrastructure should be allowed because zero-discharge scrubbers exist. TDEC is the defendant in the challenge, and TVA has intervened in support of TDEC's decision to issue the permit. The matter was set for a hearing before the TWQCB in February 2011 but has since been stayed by agreement of the parties.

Bull Run Fossil Plant NPDES Permit Appeal. SACE and the Tennessee Clean Water Network ("TCWN") filed a challenge to the NPDES permit for Bull Run Fossil Plant ("Bull Run") in November 2010. TDEC is the defendant in the challenge and TVA's motion to intervene to support TDEC's decision to issue the permit was granted in January 2011. Petitioners' motion for summary judgment was denied, and the parties expect the case to be presented to TWQCB in February 2013.

Johnsonville Fossil Plant NPDES Permit Appeal. SACE and TCWN filed a challenge to the NPDES permit for Johnsonville in March 2011. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in August 2011. The matter has not yet been given a hearing date before the TWQCB.

John Sevier Fossil Plant NPDES Permit Appeal. SACE and TCWN filed a challenge to the NPDES permit for John Sevier in May 2011. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in August 2011. The matter has not yet been given a hearing date before the TWQCB.



Gallatin Fossil Plant NPDES Permit Appeal. SACE, TCWN, and the Sierra Club filed a challenge to the NPDES permit for Gallatin Fossil Plant ("Gallatin") in June 2012. TDEC is the defendant in the challenge. TVA's motion to intervene was granted in September 2012.

Information Request from the EPA. In April 2008, TVA received a request from the EPA under Section 114 of the CAA requesting extensive information about maintenance, repair, and replacement projects at and the operations of 14 coal-fired units. The Environmental Agreements have resolved most issues related to this information request, excluding claims related to sulfuric acid mist. See Environmental Agreements.

Petitions Resulting from Japanese Nuclear Events. As a result of the Fukushima events, petitions have been filed with the NRC which could impact TVA's nuclear program. While some petitions have been dismissed after review, petitions that remain open include the following:

Petition to Immediately Suspend the Operating Licenses of GE BWR Mark I Units Pending the Full NRC Review With Independent Expert and Public Participation From Affected Emergency Planning Zone Communities

Beyond Nuclear filed a petition in April 2011, requesting that the NRC take emergency enforcement action against all nuclear reactor licensees that operate units that use the General Electric Mark I BWR design. TVA uses this design at Browns Ferry Units 1, 2, and 3. The petition requests the NRC to take several actions, including the suspension of the operating licenses at the affected nuclear units, including Browns Ferry, until several milestones

Table of Contents

have been met. In December 2011, the NRC provided its initial response to the petition. The NRC accepted five specific requests that would apply directly or indirectly to Browns Ferry, including issues relating to spent fuel pool use and location, Mark I containment hardened vent systems and design, and backup electrical power. Each of these items was accepted for further investigation, but the requests for immediate action were rejected. In April 2012, the petitioner was informed by the NRC that the proposed decision regarding the petition had been extended to January 2013.

¶ Twelve separate petitions on various issues

In August 2011, the Natural Resources Defense Council submitted twelve separate letters to the NRC requesting action on various health and safety aspects of operating nuclear facilities in the United States. The NRC is treating these as a single 2.206 Petition. In April 2012, the petitioner was informed by the NRC that its evaluation of the petition had been extended until January 2013.

Petition Pursuant to 10 CFR 2.206 - Demand For Information Regarding Compliance with 10 CFR 50, Appendix A, General Design Criterion 44, Cooling Water, and 10 CFR 50.49, Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants

A petition was filed by the Union of Concerned Scientists in July 2011, requesting that a demand for information be issued for affected licensees, including TVA with regards to Browns Ferry, to describe how the facilities comply with General Design Criterion 44, Cooling Water, within Appendix A to 10 CFR Part 50, and with 10 CFR 50.49, Environmental Qualification of Electric Equipment Important to Safety for Nuclear Power Plants, for all applicable design and licensing bases events. In February 2012, the petitioner was informed by the NRC that the proposed decision regarding the petition had been extended to January 2013.

21. Related Parties

TVA is a wholly-owned corporate agency of the federal government, and because of this relationship, TVA’s revenues and expenses are included as part of the federal budget as a revolving fund. TVA’s purpose and responsibilities as an agency are described under the “Other Agencies” section of the federal budget.

TVA currently receives no appropriations from Congress and funds its business using power system revenues, power financings, and other revenues. TVA is a source of cash to the federal government. TVA must repay an additional \$30 million of the Power Program Appropriation Investment, and then pay a return on the outstanding balance of this investment indefinitely. See Note 16 — Appropriation Investment.

TVA also has access to a financing arrangement with the U.S. Treasury pursuant to the TVA Act. TVA and the U.S. Treasury entered into a memorandum of understanding under which the U.S. Treasury provides TVA with a \$150 million credit facility. This credit facility was renewed and has a maturity date of September 30, 2013. Access to this credit facility or other similar financing arrangements has been available to TVA since the 1960s. See Note 12 — Debt Outstanding — Credit Facility Agreements.

In the normal course of business, TVA contracts with other federal agencies for sales of electricity and other services. Transactions with agencies of the federal government were as follows:

Related Party Transactions

For the years ended, or at, September 30

	2012	2011	2010
Sales of electricity	\$117	\$130	\$116
Other income	164	104	99

Edgar Filing: Tennessee Valley Authority - Form 10-K

Operating and maintenance	375	295	263
Cash and cash equivalents	32	27	227
Accounts receivable, net	49	84	26
Accounts payable and accrued liabilities	204	175	129
Return on power program appropriation investment	7	7	9
Return of power program appropriation investment	20	20	24

144

---

Table of Contents

## 22. Unaudited Quarterly Financial Information

A summary of the unaudited quarterly results of operations for the years 2012 and 2011 follows. This summary should be read in conjunction with the audited financial statements appearing herein. Results for interim periods may fluctuate as a result of seasonal weather conditions, changes in rates, and other factors.

## Unaudited Quarterly Financial Information

2012

	First	Second	Third	Fourth	Total
Operating revenues	\$2,568	\$2,604	\$2,777	\$3,271	\$11,220
Operating expenses	2,431	2,358	2,499	2,632	9,920
Operating income	137	246	278	639	1,300
Net income (loss)	(173	) (94	) (23	) 350	60

## Unaudited Quarterly Financial Information

2011

	First	Second	Third	Fourth	Total
Operating revenues	\$2,828	\$2,968	\$2,657	\$3,388	\$11,841
Operating expenses	2,558	2,401	2,575	2,870	10,404
Operating income	270	567	82	518	1,437
Net income (loss)	(48	) 253	(240	) 197	162

TVA experienced a decrease in operating revenues during the first and second quarters of 2012 primarily due to warmer than normal weather. This negatively affected sales and contributed to lower net income during 2012.

## 23. Subsequent Event

## Bond Redemption

On November 15, 2012, TVA redeemed all of its 2008 5.25 percent electronotes® due November 15, 2028, CUSIP number 88059TEJ6. The notes were redeemed at 100 percent of par value for a total of \$7 million.

Table of Contents

Report of Independent Registered Public Accounting Firm

The Board of Directors of Tennessee Valley Authority

We have audited the accompanying consolidated balance sheet of Tennessee Valley Authority as of September 30, 2012 and 2011, and the related consolidated statements of operations, changes in proprietary capital, and cash flows for each of the three years in the period ended September 30, 2012. Our audit also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of Tennessee Valley Authority's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Tennessee Valley Authority at September 30, 2012 and 2011 and the consolidated results of its operations and its cash flows for each of the three years in the period ended September 30, 2012, in conformity with U.S. generally accepted accounting principles. Also, in our opinion the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Tennessee Valley Authority's internal control over financial reporting as of September 30, 2012, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated November 15, 2012 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Chattanooga, Tennessee

November 15, 2012

Table of Contents

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer, and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), evaluated the effectiveness of TVA's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) as of September 30, 2012. Based on this evaluation, TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), concluded that TVA's disclosure controls and procedures were effective as of September 30, 2012, to ensure that information required to be disclosed by TVA in reports that it files or submits under the Exchange Act, is recorded, processed, summarized, and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms, and include controls and procedures designed to ensure that information required to be disclosed by TVA in such reports is accumulated and communicated to TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer and members of the Disclosure Control Committee, including the Vice President and Controller (Principal Accounting Officer), as appropriate, to allow timely decisions regarding required disclosure.

Internal Control over Financial Reporting

(a) Management's Annual Report on Internal Control over Financial Reporting

TVA's management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Exchange Act Rule 13a-15(f) and required by Section 404 of the Sarbanes-Oxley Act. TVA's internal control over financial reporting is designed to provide reasonable, but not absolute, assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. Because of the inherent limitations in all control systems, internal controls over financial reporting and systems may not prevent or detect misstatements.

TVA's management, including the President and Chief Executive Officer, the Executive Vice President and Chief Financial Officer and members of the Disclosure Control Committee including the Vice President and Controller (Principal Accounting Officer), evaluated the design and effectiveness of TVA's internal control over financial reporting as of September 30, 2012, based on the framework in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on this evaluation, TVA's management concluded that TVA's internal control over financial reporting was effective as of September 30, 2012.

Although management's report on the effectiveness of internal control over financial reporting was not subject to attestation by TVA's registered public accounting firm, TVA has chosen to obtain such a report. Ernst & Young LLP, the registered public accounting firm that audited the financial statements included in this Annual Report, has issued an attestation report on TVA's internal control over financial reporting. The attestation report appears below.

(b)Changes in Internal Control over Financial Reporting

During the quarter ended September 30, 2012, there were no changes in TVA's internal control over financial reporting that materially affected, or are reasonably likely to materially affect, TVA's internal control over financial reporting.

147

---

Table of Contents

Report of Independent Registered Public Accounting Firm

The Board of Directors of Tennessee Valley Authority

We have audited Tennessee Valley Authority's internal control over financial reporting as of September 30, 2012, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the COSO criteria). Tennessee Valley Authority's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Tennessee Valley Authority maintained, in all material respects, effective internal control over financial reporting as of September 30, 2012, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Tennessee Valley Authority as of September 30, 2012 and 2011 and the related consolidated statements of operations, changes in proprietary capital, and cash flows for each of the three years in the period ended September 30, 2012 of Tennessee Valley Authority and our report dated November 15, 2012 expressed an unqualified opinion thereon.



/s/ Ernst & Young LLP

Chattanooga, Tennessee

November 15, 2012

148

---

Table of Contents

ITEM 9B. OTHER INFORMATION

Not applicable.

149

---

Table of Contents

## PART III

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

## Directors

TVA is administered by a board of nine part-time members appointed by the President of the United States with the advice and consent of the U.S. Senate. The Chairman of the TVA Board is selected by the members of the TVA Board. Under the TVA Act, to be eligible to be appointed as a member of the TVA Board, an individual (i) must be a United States citizen; (ii) must have management expertise relative to a large for-profit or nonprofit corporate, government, or academic structure; (iii) cannot be a TVA employee; (iv) must make a full disclosure to Congress of any investment or other financial interest that the individual holds in the energy industry; and (v) must affirm support for the objectives and missions of TVA, including being a national leader in technological innovation, low-cost power, and environmental stewardship. In addition, the President of the United States, in appointing members of the TVA Board, must (i) consider recommendations from other public officials such as the Governors of the states in TVA's service area; individual citizens; business, industrial, labor, electric power distribution, environmental, civic, and service organizations; and the Congressional delegations of the states in TVA's service area; and (ii) seek qualified members from among persons who reflect the diversity, including geographical diversity, and needs of TVA's service area. At least seven of the nine TVA Board members must be legal residents of the TVA service area.

TVA Board members serve five-year terms, and at least one member's term ends each year. After a member's term ends, the member is permitted under the TVA Act to remain in office until the earlier of the end of the current session of Congress or the date a successor takes office. The TVA Board, among other things, establishes broad goals, objectives, and policies for TVA; develops long-range plans to guide TVA in achieving these goals, objectives, and policies; approves annual budgets; and establishes a compensation plan for employees.

The TVA Board as of November 15, 2012, consisted of the following individuals with their ages and terms of office provided:

Directors <sup>(1)</sup>	Age	Year Current Term Began	Year Term Expires
William B. Sansom, Chairman	71	2010	2014
Bishop William H. Graves	76	2008	2012 <sup>(2)</sup>
Marilyn A. Brown	63	2010	2012 <sup>(2)</sup>
Neil G. McBride	66	2010	2013
Barbara S. Haskew	72	2010	2014
Richard C. Howorth	61	2011	2015

## Notes

(1) There are currently three vacant positions on the TVA Board.

(2) Although the terms of these directors expired in May 2012, they are permitted under the TVA Act to remain in office until the earlier of the end of the current session of Congress or the date a successor takes office.

President Obama has nominated four individuals to positions on the TVA Board, and has also nominated Director Brown for a new term. These nominees must be confirmed by the U.S. Senate. There are no assurances that these individuals will be confirmed.

Mr. Sansom of Knoxville, Tennessee, served on the TVA Board from March 2006 until December 2009, was Chairman of the TVA Board from March 2006 until May 2009, and began a second term on the TVA Board in October 2010. He was elected Vice Chairman of the TVA Board in April 2011, and Chairman in January 2012. Mr.

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

Sansom is Chairman and Chief Executive Officer of the H.T. Hackney Co., a diversified company involved in the wholesale grocery and furniture manufacturing businesses, and has held that position since 1983. Since 1995, Mr. Sansom has also been a director of Astec Industries, Inc., a corporation based in Chattanooga, Tennessee, that manufactures equipment and components used in road construction, and since 1984, he has been a director at First Horizon National Corporation, a Memphis, Tennessee, bank holding company. In 2006, he was named director of Mid-America Apartment Communities, Inc., a real estate investment trust with ownership interests in apartment homes. From 1994 to 2006, he was a director of Martin Marietta Materials, Inc., a company based in Raleigh, North Carolina, that is in the construction material business.

Bishop Graves of Memphis, Tennessee, served on the TVA Board from October 2006 to December 2007 and began a second term on the TVA Board in June 2008. He served as Presiding Bishop of the Christian Methodist Episcopal Church in Memphis, Tennessee, from May 1982 until July 2010, and as Senior Bishop (CEO) from June 2006 until July 2010. Previously he was a pastor of the Phillips Temple CME Church of Los Angeles, California. From September 1993 to July 2004, he was a member of the Board of Memphis Light, Gas and Water, a TVA distributor customer.

Dr. Brown of Atlanta, Georgia joined the TVA Board in October 2010. Dr. Brown has been a Professor in the School of

Table of Contents

Public Policy at Georgia Institute of Technology in Atlanta, Georgia, since August 2006. From 1984 to August 2006, Dr. Brown worked at the Oak Ridge National Laboratory ("ORNL") in Oak Ridge, Tennessee. At ORNL, she was Deputy Director and Acting Director of the Engineering Science and Technology Division (from 2005 to 2006), and Program Director of the Energy Efficiency and Renewable Energy Program (from 2000 to 2005). Dr. Brown served from 2006 until 2009 as a member of the Board of Directors of the Southeast Energy Efficiency Alliance, serving as Board Chair from 2006 until 2008. She served as a member of the Board of Directors of the American Council for an Energy-Efficient Economy from 2002 until 2009. From 2002 until 2009, Dr. Brown was a commissioner on the National Commission on Energy Policy. She served as a member of the Board of Directors of the Alliance to Save Energy from 2000 through 2009.

Mr. McBride of Oak Ridge, Tennessee, joined the TVA Board in October 2010. Mr. McBride is the General Counsel of Legal Aid Society of Middle Tennessee and the Cumberland ("Legal Aid") and Managing Director of the Oak Ridge Office of Legal Aid, positions he has held since 2002. In 1978, he founded Rural Legal Services of Tennessee and served as its director until it was consolidated with Legal Aid in 2002. Mr. McBride became a director of the Tennessee Alliance for Legal Services in 1980 and currently serves as a member of its executive committee. He has been a member of the Tennessee Bar Association House of Delegates from 2001 to present. Mr. McBride was a director of the Highlander Research and Education Center from 2002 to 2008. He also works as an independent consultant for various legal services organization.

Dr. Haskew of Chattanooga, Tennessee, joined the TVA Board in 2010. Dr. Haskew began working at Memphis State University in 1965. She joined Middle Tennessee State University ("MTSU") in 1970 and chaired the Department of Economics and Finance from 1974 until 1980. In 1980 she left MTSU and managed the TVA Rate Staff for eight years. Dr. Haskew returned to MTSU in 1988 and served as Dean of the College of Business until her appointment as Provost and Vice President for Academic Affairs in 1995. She retired from MTSU in August 2010. Dr. Haskew is a labor and employment arbitrator on the rosters of the American Arbitration Association and the Federal Mediation and Conciliation Service.

Mr. Howorth of Oxford, Mississippi, is the owner of Square Books, an Oxford independent bookstore he founded in 1979. Mr. Howorth served two terms as the mayor of Oxford, from 2001 to 2009, during which time he was chairman of the authority overseeing the Oxford Electric Department. From 2001 to 2009, he also served as a director and officer of the North Mississippi Industrial Development Association, an economic development consortium made up of power association directors and mayors of cities in 29 Mississippi counties in the TVA service area.

Under the TVA Act, five members constitute a quorum of the TVA Board. If Congress adjourns prior to confirming at least one additional board member, the TVA Board will have only four members. If a quorum ceases to exist, the remaining members would continue to operate as provided by the TVA Bylaws. The Bylaws provide that members of a TVA Board without a quorum may continue to exercise those powers of the TVA Board that are necessary to assure continuity of operations of TVA along the lines established while TVA was guided by a quorum. However, they would not be able to change TVA's rates, approve new programs, or change TVA's strategic direction. At this time, it is difficult to predict those situations in which loss of a quorum would have a material adverse effect on TVA's cash flows, results of operations, and financial condition.

Executive Officers

TVA's executive officers as of November 15, 2012, their titles, their ages, and the date their employment with TVA commenced are as follows:

Executive Officers	Title	Age	Employment Commenced
Tom Kilgore	President and Chief Executive Officer	64	2005

Edgar Filing: Tennessee Valley Authority - Form 10-K

Kimberly S. Greene	Executive Vice President and Chief Generation Officer	46	2007
Janet C. Herrin	Executive Vice President and Chief Administrative Officer	58	1978
Robin E. Manning	Executive Vice President and Chief Energy Delivery Officer	56	2008
Ralph E. Rodgers	Executive Vice President and General Counsel	58	1979
Preston D. Swafford	Executive Vice President and Chief Nuclear Officer	52	2006
John M. Thomas, III	Executive Vice President and Chief Financial Officer	49	2005
Joseph J. Hoagland	Senior Vice President, Policy and Oversight	47	1992
Michael D. Skaggs	Senior Vice President, Nuclear Construction	52	1994
Diane T. Wear	Vice President and Controller (Principal Accounting Officer)	44	2008

Mr. Kilgore was named Chief Executive Officer in October 2006 after having served as President and Chief Operating Officer since joining TVA in March 2005. He previously served as President and Chief Executive Officer of Progress Energy Ventures, a subsidiary of Progress Energy Company created to manage various operations of Progress Energy Company, including fuel extraction and energy marketing, from April 2000 to February 2005. Prior to taking that position, Mr. Kilgore had been Senior Vice President of Power Operations for Carolina Power & Light Company (which became Progress Energy) since August 1998. From 1991 to 1998, Mr. Kilgore was President and Chief Executive Officer of Oglethorpe Power Corporation in

Table of Contents

Atlanta, Georgia.

Ms. Greene was named Executive Vice President and Chief Generation Officer in February 2012. She previously served as Group President of Strategy and External Relations from January 2010 to February 2012 and as Chief Financial Officer and Executive Vice President, Financial Services from September 2007 to January 2010. Before joining TVA, Ms. Greene served as Senior Vice President, Finance, and Treasurer at Southern Company Services, an energy company, from July 2003 to September 2007. From July 2002 to July 2003, Ms. Greene was director of portfolio management for Southern Company Generation and Energy Marketing. Ms. Greene also serves on the Board of the Electric Power Research Institute, an independent, non-profit company performing research, development, and demonstration in the electricity sector.

Ms. Herrin was named Executive Vice President and Chief Administrative Officer in February 2012. She previously served as Executive Vice President, People and Performance from June 2010 to February 2012. Prior to this appointment, she was the Senior Vice President, River Operations, a position she had held since February 1999. In that position, Ms. Herrin was responsible for establishing river operations policies, procedures, and standards for TVA and served as TVA's Dam Safety Officer. She began her career at TVA in 1978 as a civil engineer. She has served on the TVA Retirement System Board since 2005.

Mr. Manning was named Executive Vice President and Chief Energy Delivery Officer in February 2012. Mr. Manning previously served as Executive Vice President, Power System Operations since joining TVA in August 2008. From April 2006 to August 2008, Mr. Manning served as Vice President of Field Operations for Duke Energy Corporation. Mr. Manning joined Duke Energy Corporation in 1978 and held a variety of leadership positions there, including Vice President, Central Region for Duke Energy Power Delivery (from January 2004 to April 2006), Vice President of Engineering Standards and Process Management for Duke Energy Electric Transmission (from May 2003 to January 2004), and Vice President of Engineering for Duke Energy Gas Transmission (now Spectra Corporation) (from September 2000 to June 2003).

Mr. Rodgers was named Executive Vice President and General Counsel in July 2011. He previously served as Acting General Counsel from April 2010 to July 2011, as Deputy General Counsel from January 2010 to April 2010, as Assistant General Counsel from February 2001 to January 2010, and as an attorney from June 1979 to March 1986 and from June 1987 to February 2001.

Mr. Swafford has served as Executive Vice President and Chief Nuclear Officer since February 2009. From June 2007 to February 2009, he was Executive Vice President, Fossil Power Group, and from May 2006 to May 2007, he was Senior Vice President, Nuclear Support. From December 1995 to April 2006, Mr. Swafford held various positions at Exelon Corporation, an energy company based in Illinois, and its subsidiaries. From 2002 to 2006, he served as Senior Vice President, Exelon Energy Delivery, and was responsible for transmission and distribution of electricity. From 2002 to 2003, he was Vice President, Exelon Power, and was responsible for its fleet of gas, coal-fired, and hydroelectric generating facilities. From 2000 to 2002, he was Vice President, Dresden Nuclear Station.

Mr. Thomas has served as Executive Vice President since February 2012 and Chief Financial Officer since June 2010. He previously served as Executive Vice President of People and Performance from January 2010 to June 2010, as Senior Vice President, Corporate Governance and Compliance from July 2009 to January 2010, as Controller and Chief Accounting Officer from January 2008 to September 2009, and as the General Manager, Operations Business Services from November 2005 to January 2008, where he was responsible for financial and performance support to TVA's operating organizations. Prior to joining TVA, Mr. Thomas was Chief Financial Officer during 2005 for Benson Security Systems. He was also the Controller of Progress Fuels Corporation (from 2003 to 2005) and Controller of Progress Ventures, Inc. (from 2001 to 2002), both subsidiaries of Progress Energy, where he was

responsible for accounting operations, financial reporting, forecasting, and risk management.

Dr. Hoagland was named Senior Vice President, Policy and Oversight in February 2012. Dr. Hoagland was previously Vice President, Office of the CEO, a position he held from January 2010 to February 2012. Since joining TVA in 1992, Dr. Hoagland has held several management positions, including Vice President of Environmental Science, Technology & Policy from January 2009 to January 2010, and Vice President of Energy Efficiency & Demand Response from January 2007 to January 2009.

Mr. Skaggs was named Senior Vice President, Nuclear Construction in February 2012. Mr. Skaggs was previously Senior Vice President of Nuclear Generation Development & Construction, a position he held from October 2011 to February 2012. Since joining TVA in 1993 as Manager of Projects at Watts Bar Nuclear Plant, he has held several management positions, including Site Vice President of Sequoyah Nuclear Plant from November 2010 to October 2011, Vice President of Nuclear Operations Support from December 2009 to November 2010, Site Vice President at Watts Bar Nuclear Plant from July 2005 to December 2009, and Site Vice President at Browns Ferry Nuclear Plant from July 2004 to July 2005.

Ms. Wear has served as Vice President and Controller since March 2012. Ms. Wear was the Assistant Controller from February 2010 to March 2012. Between April 2008, when she joined TVA, and February 2010, Ms. Wear was the General Manager, External Reporting/Accounting Policy and Research. Prior to joining TVA, Ms. Wear was a Managing Director at PricewaterhouseCoopers LLP. Ms. Wear joined a predecessor firm to PricewaterhouseCoopers LLP in January 1992.



## Table of Contents

On August 14, 2012, Tom Kilgore, TVA's President and Chief Executive Officer ("CEO"), notified TVA's Board Chairman of his decision to retire from TVA in four to six months, and on November 5, 2012, TVA announced the appointment of William D. Johnson to succeed Mr. Kilgore as CEO effective January 1, 2013.

### Disclosure and Financial Code of Ethics

TVA has a Disclosure and Financial Ethics Code ("Financial Ethics Code") that applies to all executive officers (including the Chief Executive Officer, Chief Financial Officer, and Controller) and directors of TVA as well as to all employees who certify information contained in quarterly reports or annual reports or who have responsibility for internal control self-assessments. The Financial Ethics Code includes provisions covering conflicts of interest, ethical conduct, compliance with applicable laws, rules, and regulations, responsibility for full, fair, accurate, timely, and understandable disclosures, and accountability for adherence to the Financial Ethics Code. TVA will provide a current copy of the Financial Ethics Code to any person, without charge, upon request. Requests may be made by calling 888-882-4975 or by sending an e-mail to: [investor@tva.com](mailto:investor@tva.com). Any waivers of or changes to provisions of the Financial Ethics Code that require disclosure pursuant to applicable Securities and Exchange Commission requirements will be promptly disclosed to the public, subject to limitations imposed by law, on TVA's website at: [www.tva.gov](http://www.tva.gov). Information contained on TVA's website shall not be deemed incorporated into, or to be a part of, this Annual Report.

### Committees of the TVA Board

The TVA Board has an Audit, Risk, and Regulation Committee established in accordance with the TVA Act. TVA's Audit, Risk and Regulation Committee consists of William B. Sansom, Neil G. McBride, and Barbara S. Haskew. Director Sansom is an "audit committee financial expert" as defined in Item 407(d)(5) of Regulation S-K under the Exchange Act.

TVA is exempted by section 37 of the Exchange Act from complying with section 10A(m)(3) of the Exchange Act, which requires each member of a listed issuer's audit committee to be an independent member of the board of directors of the issuer. The TVA Act contains certain provisions that are similar to the considerations for independence under section 10A(m)(3) of the Exchange Act, including, as described above, that to be eligible for appointment to the TVA Board, an individual shall not be an employee of TVA and shall make full disclosure to Congress of any investment or other financial interest that the individual holds in the energy industry.

Under section 10A(m)(2) of the Exchange Act, which applies to TVA, the audit committee is directly responsible for the appointment, compensation, and oversight of the external auditor; however, the TVA Act assigns the responsibility for engaging the services of the external auditor to the TVA Board.

The TVA Board has also established the following committees in addition to the Audit, Risk and Regulation Committee:

- Finance, Rates, and Portfolio Committee
- External Relations Committee
- People and Performance Committee
- Nuclear Oversight Committee

## ITEM 11. EXECUTIVE COMPENSATION

### COMPENSATION DISCUSSION AND ANALYSIS

This Compensation Discussion and Analysis provides information about TVA's compensation philosophy and strategy, as well as the policies and decisions that guided TVA in 2012 in establishing the level and nature of the compensation provided to the executive officers named in the Summary Compensation Table (the "Named Executive Officers" or "NEOs"). The 2012 Named Executive Officers are: Tom Kilgore, the President and CEO, John M. Thomas, III, the Chief Financial Officer ("CFO"), Kimberly S. Greene, Preston D. Swafford, and Ralph E. Rodgers. Detailed information about the compensation of each of the NEOs is listed in the Summary Compensation Table. On August 14, 2012, Mr. Kilgore announced his intended retirement, and on November 5, 2012, TVA announced the appointment of William D. Johnson to succeed Mr. Kilgore as CEO effective January 1, 2013.

#### Executive Summary

The TVA Act places significant authority and responsibility in the TVA Board for matters associated with the compensation of TVA employees, including the Named Executive Officers. The TVA Board exercised this authority when it approved the compensation plan for all TVA employees (the "Compensation Plan") and when it delegated certain bounded authority to the Chairman of the TVA Board and to the CEO. Despite these delegations, the TVA Board, the People and Performance Committee of the TVA Board (the "Committee"), and individual TVA Board members maintain an active involvement in compensation matters. The TVA Board-level involvement with the compensation of the Named Executive Officers is an annual process. This involvement includes the consideration of benchmarking and other information provided by the TVA Board's compensation consultant, as well as consultation with TVA management regarding its recommendations for

Table of Contents

compensation programs and actions. In addition, TVA Board-level involvement occurs with respect to those items that have been reserved to the TVA Board for approval, with respect to the review, oversight, or consultation by the Committee, as required, and with respect to the consultation with individual TVA Board members, as required. These matters are discussed in greater detail below.

The TVA Board established the Compensation Plan based on the requirements of the TVA Act. The Compensation Plan is designed to support TVA's mission and to fulfill the following purposes:

Provide a competitive level of compensation that enables TVA to attract, retain, and motivate highly competent employees. Total target compensation for each position in TVA is determined by market pricing based on a level needed to attract, retain, and motivate employees critical to TVA's success in achieving its mission and vision. Accordingly, total direct compensation levels typically are targeted at the median (50<sup>th</sup> percentile) of the relevant labor market for most positions. However, total direct compensation levels for positions subject to market scarcity, recruitment and retention issues, and other business reasons, are targeted at a higher level (typically between the 50<sup>th</sup> and 75<sup>th</sup> percentiles). Similarly, total direct compensation levels for positions that are not subject to competitive pressures are targeted at a lower level (typically between the 25<sup>th</sup> and 50<sup>th</sup> percentiles).

Encourage and reward executives for their performance and contributions to the successful achievement of financial and operational goals. A key tenet of the Compensation Plan is to pay for performance by rewarding all employees for improvement in TVA's overall performance, as well as that of individual business units. The TVA Board believes that the portion of total direct compensation delivered through structured incentive compensation should increase as an employee's position and level of responsibility within TVA increases. Accordingly, executives have the highest percentage of their compensation tied to TVA and business unit performance. For the Named Executive Officers, 56 percent to 68 percent of their total target direct compensation opportunity is performance-based incentive compensation.

Provide executives with the focus to achieve short-term and long-term business goals that are important to TVA, TVA's customers, and the other people TVA serves. TVA seeks to hire and retain executives who are focused on both TVA's short-term and long-term success. The Compensation Plan is designed to achieve this goal by providing a mix of salary and performance-based annual and long-term incentive compensation.

Improve overall company performance through productivity enhancement. An executive cannot help meet TVA's goals and improve performance without the work of others. For this reason, the performance goals set at the corporate level are the same for both executives and all non-executive employees. This generally translates into all TVA employees receiving compensation in a manner that aligns their work with the same goals and encourages and rewards them for the successful achievement of TVA's goals.

Table of Contents

Under the Compensation Plan, the compensation programs for the Named Executive Officers consist of the components identified in the following table:

Compensation Program Components for Named Executive Officers

Compensation Component	Objective	Key Features
Annual Salary	Fixed and paid biweekly to executives	<p>Annual salary is targeted at the median (50<sup>th</sup> percentile) for similar positions at other companies in TVA's peer group, above the median (50<sup>th</sup> to 75<sup>th</sup> percentile) for positions affected by market scarcity, recruitment and retention issues, and other business reasons, or below the median (25<sup>th</sup> to 50<sup>th</sup> percentile) for positions for which TVA does not compete exclusively with the energy and utility services industry or which are not subject to competitive pressures</p> <p>In past years, typically reviewed annually to consider changes in peer group benchmark salaries and/or exceptional individual merit performances (see Executive Compensation Program Components — Federal Salary Freeze for discussion on impacts of current salary freeze)</p> <p>Target annual incentive opportunities increase with position and responsibility and are based on the opportunities other companies in TVA's peer group provided to those in similar positions</p>
Annual Incentive Compensation	Not-guaranteed, variable, and based on the attainment of pre-established performance goals for the fiscal year	<p>Annual incentive payouts are based on the results of performance goals at the TVA level, as determined from year to year by the TVA Board, and the results of strategic business unit goals for executives who support specific business units of TVA, as determined from year to year by the CEO. Annual incentive payouts may be adjusted by the TVA Board or CEO, as appropriate, based on the evaluation of performance during the year</p> <p>Annual incentive opportunities are reviewed annually to consider changes in peer group benchmark short-term incentives</p>
Long-Term Incentive Compensation	Not-guaranteed, variable, and based on the attainment of pre-established performance goals for a performance cycle, typically three fiscal years	<p>Target long-term incentive opportunities are limited to executives in critical positions who make decisions that significantly influence developing and attaining TVA's long-term strategic objectives</p> <p>Target long-term incentive payouts are based on achieving performance goals established for a specific performance cycle and may be adjusted by the TVA Board based on the evaluation of performance during the cycle</p> <p>Long-term incentive opportunities are reviewed annually to consider changes made in the long-term incentives by companies in TVA's peer group</p>

Edgar Filing: Tennessee Valley Authority - Form 10-K

Long-Term Deferred Compensation	Awarded in the form of annual credits that vest after a specified period of time, typically three to five years	Awarded to provide retention incentives to executives similar to the retention incentive provided by restricted stock or restricted stock units in publicly-traded companies  Executives generally must remain at TVA for the entire length of the agreement in order to receive compensation credits  The amount of the annual long-term deferred compensation credit is targeted to approximately 20 percent of total long-term compensation
Total Direct Compensation	Annual Salary plus Annual Incentive Compensation plus Long-term Incentive Compensation plus Long-Term Deferred Compensation	Total direct compensation (salary plus annual and long-term incentive compensation plus long-term deferred compensation) is targeted at the median (50 <sup>th</sup> percentile) for similar positions at other companies in TVA's peer group, above the median (50 <sup>th</sup> to 75 <sup>th</sup> percentile) for positions affected by market scarcity, recruitment and retention issues, and other business reasons, or below the median (25 <sup>th</sup> to 50 <sup>th</sup> percentile) for positions which are not subject to competitive pressures
Pension Plans	Both qualified and supplemental, which provide compensation beginning with retirement or termination of employment (if vesting requirements are satisfied)	Broad-based plans available to full-time employees of TVA that are qualified under IRS rules and that are similar to the qualified plans provided by other companies in TVA's peer group  Certain executives in critical positions also participate in a non-qualified pension plan that provides supplemental pension benefits at compensation levels that exceed the limits permitted by the IRS regulations applicable to qualified plans; these supplemental benefits are comparable to those provided by other companies in TVA's peer group

TVA's Chief Risk Officer and the Enterprise Risk Management organization have a process to assess potential risks to TVA that could arise from the Compensation Plan and TVA's policies and practices of compensating its employees, both executive and non-executive. Based on this review, for 2012, TVA's Chief Risk Officer and Enterprise Risk Management

Table of Contents

organization have concluded that the Compensation Plan, TVA's compensation policies and practices, and TVA's executive and non-executive incentive-pay plans are not reasonably likely to have a material adverse effect on TVA.

Authority for the Executive Compensation Program

The TVA Act is the authority for establishing the compensation of all TVA employees, including the Named Executive Officers, and places responsibility for doing so with the TVA Board. Under section 2 of the TVA Act, the TVA Board is directed to establish a compensation plan for all TVA employees which:

• Specifies all compensation (such as salary or any other pay, benefits, incentives, and any other form of remuneration) for the CEO and TVA employees;

• Is based on an annual survey of the prevailing compensation for similar positions in private industry, including engineering and electric utility companies, publicly owned electric utilities, and federal, state, and local governments; and

• Provides that education, experience, level of responsibility, geographic differences, and retention and recruitment needs will be taken into account in determining compensation of employees.

The TVA Act also provides that:

• The TVA Board will annually approve all compensation (such as salary or any other pay, benefits, incentives, and other form of remuneration) of all managers and technical personnel who report directly to the CEO (including any adjustment to compensation);

• On the recommendation of the CEO, the TVA Board will approve the salaries of employees whose salaries would be in excess of Level IV of the Executive Schedule (\$155,500 in 2012); and

• The CEO will determine the salary and benefits of employees whose annual salary is not greater than Level IV of the Executive Schedule (\$155,500 in 2012).

The philosophy of the Compensation Plan with respect to the market competitiveness of pay for TVA's employees is based on the TVA Act. The philosophy recognizes that many employees, including executives, are called on to accomplish specialized aspects of TVA's mission safely, reliably, and efficiently, and must have the requisite education, experience, and professional qualifications. These requirements make it necessary for TVA to offer compensation to its specialized employees that makes it possible for TVA to attract highly qualified candidates for positions similar to those in relevant industries and motivate them to stay with TVA.

In establishing the Compensation Plan, the TVA Board delegated to the CEO the authority to approve, or delegate to others the authority to approve, all personnel and compensation actions for which the TVA Board is responsible but has not reserved for itself to approve. The TVA Board has taken various additional actions to delegate authority with respect to executive compensation as follows:

• The TVA Board has approved compensation ranges for the direct reports to the CEO of 80 percent to 110 percent of the median total direct compensation for comparable positions, as established by benchmarking sources outside of TVA, and authorized the CEO to set or adjust compensation for the CEO's present or future direct reports within such compensation ranges, as well as to approve the parameters under which such executives may participate in certain supplemental benefit plans such as TVA's Supplemental Executive Retirement Plan ("SERP"), provided that the CEO may not finally set or adjust such compensation until the Committee, or the full TVA Board, has had the opportunity to review the proposed compensation.

• The TVA Board has delegated to the Chairman of the TVA Board, in consultation with the Committee and with input from individual members of the TVA Board, the authority to evaluate and rate the performance of the CEO during the

year, and the authority to approve any payout to the CEO under the Executive Annual Incentive Plan ("EAIP") based on, among other things, the CEO's evaluated performance during the year.

The TVA Board has delegated to the CEO, in consultation with the Committee and with input from individual members of the TVA Board, the authority to approve the individual performance goals for the CEO's direct reports and the authority to evaluate and rate the performance of the CEO's direct reports during the year.

#### TVA Board Committee Oversight

The Committee was responsible for oversight of executive compensation pursuant to the Compensation Plan, review of this Compensation Discussion and Analysis, and review of performance goal achievement for 2012. As delegated by the TVA Board, the Committee also (1) reviewed proposed actions of the CEO to set or adjust the compensation of the CEO's direct reports within the 80 percent to 110 percent compensation range of the median total direct compensation for comparable positions and the parameters under which such executives may participate in certain supplemental benefit plans such as the SERP, (2) consulted with the Chairman of the TVA Board about the Chairman's proposed evaluation and rating of the performance of the CEO during the year and about the proposed payout to the CEO under the EAIP based on