# **PRESIDENT'S REPORT**



## **TVA Performance Summary**

		Vs. Plan	Vs. Last Year	Vs. Peers
Rates	Net Cash Flow			
	Retail Rates			$\bigcirc$
	Sales			
	Fuel & Purchased Power			
	<b>Operations &amp; Maintenance*</b>	$\bigcirc$		$\bigcirc$
	Capital Investment			
Reliability	Plant Reliability	$\bigcirc$		$\bigcirc$
	System Reliability			$\bigcirc$
	Runoff			
	Hydro Generation			
Responsibility	Safety			
	Environmental (REE)	$\bigcirc$		$\bigcirc$
	Organizational Effectiveness			

\*FYTD09 O&M includes KIF Clean Up

### **Notice of Violations**



# **Operations and Financials**

#### **Power Sales**



### **Energy Supply**



#### Revenue



## **Operating Expenditures**

#### July YTD 2010 Spend



### **Fuel Cost Adjustment**



## **Rainfall and Runoff**



## **Rainfall and Runoff - Recent Trend**

FY10 Cumulative Rainfall Deviation from Normal



# **Industry News**

### **Industry News**

Congress delays energy legislation

EPA proposes Clean Air Transport Rule

EPA holds public meetings on coal combustion residue rules

Georgia Power's long-range plan calls for less reliance on coal; new focus on conservation

NERC report cautions that a major shift to cleaner energy sources can affect reliability (and consequently cost)

Recent rate actions: Kentucky Power (+12.5%); Georgia Power (+10%\*); Kentucky Utilities(+8.3%); Dominion, North Carolina (+5%)

\*Requested

# **Hard Spots**



#### **Extreme heat and high power demand**



## **Meeting the Summer Peak**



Summer, 2010

31,777 Megawatts

August 4

 $99^{\circ} F$ 

**All Time** 

33,482 Megawatts

August 16, 2007

102°



Extreme heat and high power demand

**Cooling water limits at power plants** 

# Cooling Water Limits at Power Plants





Extreme heat and high power demand

Cooling water limits at power plants

**Fire at Shawnee Fossil Plant** 



# Fire at Shawnee Fossil Plant



Extreme heat and high power demand

Cooling water limits at power plants

Fire at Shawnee Fossil Plant

**Kingston fine** 



Extreme heat and high power demand

Cooling water limits at power plants

Fire at Shawnee Fossil Plant

Kingston fine

**Generation Partners communications** 

# Generation Partners



Extreme heat and high power demand

Cooling water limits at power plants

Fire at Shawnee Fossil Plant

Kingston fine

Generation Partners communications

**Reaction to mixed oxide fuel** 



#### Improving regional economy and power sales

## **Regional Manufacturing Trend**



Improving regional economy and power sales

523-day run by Browns Ferry Unit 1



Improving regional economy and power sales

523-day run by Browns Ferry Unit 1

**Favorable ruling on North Carolina lawsuit** 

Improving regional economy and power sales

- 523-day run by Browns Ferry Unit 1
- Favorable ruling on North Carolina lawsuit

#### **Toyota resumes construction in Mississippi**





New Toyota Plant at TVA Megasite, Blue Springs, MS

-RYC Behind the Lens

Improving regional economy and power sales

- 523-day run by Browns Ferry Unit 1
- Favorable ruling on North Carolina lawsuit
- Toyota resumes construction in Mississippi

Major 500-kilovolt transmission project completed


### **Highlights**

Improving regional economy and power sales

- 523-day run by Browns Ferry Unit 1
- Favorable ruling on North Carolina lawsuit
- Toyota resumes construction in Mississippi
- Major 500-kilovolt transmission project completed
- Watts Bar progress



#### **Highlights**

Improving regional economy and power sales

- 523-day run by Browns Ferry Unit 1
- Favorable ruling on North Carolina lawsuit
- Toyota resumes construction in Mississippi
- Major 500-kilovolt transmission project completed
- Improving demand response

#### **ORAU** health screening results for Kingston

# **Chairman's Report**



# Vision and Strategic Direction



# **Overview**

A Look Back (briefly)A Look at TodayA Vision for Tomorrow





## **History of Accomplishment**



## **History of Accomplishment**





**River Management** 



Economic Development



**Environmental Stewardship** 

# **Largest Public Power Provider**

2009 Sales in Billions of Kilowatt-hours





# A Look at Today



Economic uncertainty Infrastructure investments needed

Still no clear national energy policy

Opportunities exist for TVA to lead





# But the times are changing...

## So our vision is changing

To achieve our mission today we must lead with:

Focus ...on key critical issues Action ...to achieve an impact Clarity...so results are transparent



## **TVA's Vision**

One of the Nation's Leading Providers of Low-Cost and Cleaner Energy by 2020

## **TVA's Vision**

Serve the People of the Tennessee Valley by being: The Nation's leader in improving our air quality The Nation's leader in increased nuclear production The Southeast's leader in increased energy efficiency

# Staying Focused on...

**Our Rates** 

**Our Reliability** 

**Our Reputation** 





# While acting on new initiatives...

- Improved air quality
- Increased nuclear production
- Increased energy efficiency



# While acting on new initiatives...

- Improved air quality
- Increased nuclear production
- Increased energy efficiency



# Cleaner Power Production Significantly increase production from low emission electricity generators

# Reduce Emissions Reduce $SO_2$ , $NO_X$ , mercury, particulate, and $CO_2$ emissions from TVA plants

## **Sulfur Dioxide Emissions**



65

## **Nitrogen Oxide Emissions**



# While acting on new initiatives...

- Improved air quality
- Increased nuclear production
- Increased energy efficiency



# New generation Lead the nation in delivery of new nuclear capacity

# **Nuclear Capacity Additions**

Potential and Planned Additions from 2010–2020 in Megawatts



## Technology

# Demonstrate the first small modular reactor in the U.S.



Image courtesy of Babcock and Wilcox

# While acting on new initiatives...

- Improved air quality
- Increased nuclear production
- Increased energy efficiency



Energy Efficiency Help consumers and businesses use energy more efficiently and save money



## **Energy Efficiency Program Goal**

Energy Efficiency savings from 2010–2015 as percent of sales



73

**Demand management** Reduce peak power usage with demand management tools, including time-of-use rates



# Efficient production Minimize transmission losses and optimize plant efficiency



## **TVA's Vision**

One of the Nation's Leading Providers of Low-Cost and Cleaner Energy by 2020

# **Achieving the Vision**

Role of the Integrated Resource Plan

#### **Integrated Resource Plan Process**

Scope

Summer 2009

#### **Stakeholders Are Involved**

<ul> <li>Commonwealth of Kentucky</li> </ul>	State of Tennessee
<ul> <li>Howard Baker Center for Public Policy</li> </ul>	Tennessee Chamber of Commerce and Industry
Joe Wheeler EMC	Tennessee Paper Council
Oak Ridge National Laboratory	Tennessee Valley Industrial Committee
Partnership for Affordable Clean Energy	<ul> <li>Tennessee Valley Public Power Association</li> </ul>
Sierra Club	Tennessee Wildlife Resource Agency
<ul> <li>Southern Alliance for Clean Energy</li> </ul>	<ul> <li>University of Tennessee, Knoxville</li> </ul>
State of Mississippi	
### **Integrated Resource Plan Process**



### **Integrated Resource Plan Process**



### **IRP Helps Shape and Test the Vision**

#### **TVA Mission**



### **Building Flexibility for Future Decisions**

IRP will present multiple planning strategies

Portfolios cover a broad range of supply and demand-side options

#### Building a "Multi-lane Highway" of Flexibility



Time

Environmental benefits of options are considered

### **IRP Uses Scenario Planning Method**

			Scenarios					
		Current Situation	#1	#2	#3	#4	#5	#6
anning Strategies	A							
	В							
	С							
	D							
Р	E							

### **Modeling is Extensive**



### **Portfolio Expansion Plans**



### **Implications of Draft IRP Results**

Early Indication		Implication	
Environmental Benefits		Cleaner portfolio provides cost and environmental benefits	
Nuclear		Needed by 2018-2020 to replace coal	
Energy Efficiency and Demand Response		Steady growth of EE/DR effort	
Renewable		Consider additional cost-effective sources	
Natural Gas		Preserve option for additional capacity	
Coal		Consider less coal generation	

### **Cumulative Capacity Changes**



### **Cumulative Capacity Changes with EE&DR**



#### **Committed to Serving the Public**



### **TVA's Vision**

One of the Nation's Leading Providers of Low-Cost and Cleaner Energy by 2020

## First steps toward the Vision

Idling approximately 1,000 megawatts of our older, unscrubbed coal units

Recommending approval of the next phase of the Bellefonte Nuclear Project

Recommending approval for an increase in the energy efficiency budget



# **Next Steps**

Approval of:

- Vision
- Fiscal Year 2011 Budget
- Integrated Resource Plan in Spring 2011



### **TVA's Vision**

One of the Nation's Leading Providers of Low-Cost and Cleaner Energy by 2020

# Finance, Rates, and Portfolio



Fiscal Year 2011 Budget Approval

### **What This Plan Includes**

<b>Discussion Topic</b>	Key Takeaway		
Supply and Demand	Well Balanced		
Fuel and Purchased Power	Prices Increasing		
<b>Operational Spending</b>	Asset Investments		
Capacity Expansion	Addressing Future Needs		
Financial Health	Appropriately Capitalized Principles Based		
<b>Risks and Challenges</b>	Economic and regulatory uncertainty Pension Challenges		

# **Supply and Demand**

Expect some regional GDP growth in 2011

Industrial production has been recovering faster than expected

Weak commercial activity continues

Unemployment remains high in the region

### **Projected TVA Sales**



Excludes off-system sales

### **Capacity & Peak Demand Balance**



### Key Takeaways (Supply & Demand)

Slight sales decline due to weather

Modest economic recovery continues

System demands met with planned capacity additions

## **Fuel and Purchased Power**

#### **Coal Prices**



**Coal Prices – Composite of four supply basins (FOB mine)** 

### **Natural Gas Prices**



### **Purchased Power Prices**



### **Fuel and Purchased Power**

- Less volume due to lower sales -\$100M
- Higher prices: Coal +\$350M; Purchase Power +\$200M; Gas +\$50M
- Hydro impact: +\$150M



### **Fuel and Purchased Power Contracting**

The Contracting Plan is the basis to authorize contracts that satisfy fuel- and power-related operating requirements. It enables TVA to:

- Economically and reliably supply fuel to TVA's fleet
- Purchase power where economical
- Manage rate volatility for customers

### Key Takeaways (Fuel & Purchased Power)

Fuel volume down due to lower sales

Overall commodity prices trending up

Lower priced contracts expiring

Laddered hedging utilized to mitigate customer fuel volatility

## **Gas Transportation**

### **Gas Transportation**



Texas Gas Transmission is the sole gas pipeline to the Southaven CC facility and supplies the Lagoon Creek CC, Marshall CT and Allen CT facilities

Firm pipeline capacity is required to ensure reliable power generation capacity from the 817 MW Southaven CC facility

The 10 year agreement secures competitive rates for firm transportation and reduces TVA exposure to excessive balancing charges

# Enrichment Services Contracts

### **Enrichment Services Contracts**

TVA must buy uranium enrichment services to ensure an adequate and uninterrupted supply of fuel for our nuclear reactors

### **Uranium Processing**


# **GLE Enrichment Offer**

GLE (North Carolina plant) provides competitive offer for enrichment:

- The contract would provide 12% of TVA's enrichment needs from 2015 to 2025
- Pricing compares favorably with previously accepted contracts
- Supply diversification
- Total price: \$400 million

# **GLE New Technology Risk Mitigation**

Laser technology to be commercially proven

TVA's enriched uranium inventory is a mitigation against GLE production delays

In case of the GLE project termination, other enrichment services contracts can be entered into with existing TVA enrichment suppliers

Once GLE achieves startup, GE-Hitachi will provide financial assurance as a letter of credit, surety bond, or parental guaranty

# **Operational Spending**

### **Base Capital per Kilowatt Investment**



#### **Non-Fuel Operations and Maintenance Expenses**



### **Non-Fuel O&M Increases**

### Fiscal Year 2011

Incremental fossil and nuclear investments	\$80 million
Additional Nuclear Refueling Outages	\$30 million
Anticipated inflation	\$80 million
Energy efficiency and demand response programs	\$45 million
Economic development	\$40 million

# **Capital Investment**



# **2011 Capital Projects**

#### **Environmental**

Kingston - Wet to Dry Ash Conversion PAF 1-2 Particulate Collection WCF 7-8 Particulate Collection Particulate Control Improvement SO3 Mitigation

#### \$351 million

#### **Base Capital**

Physical and Cyber Security Improvements Nuclear Security Upgrades Watts Bar Control Rod Replacement Sequoyah Switchyard Improvements Nuclear Major Critical Spares Paradise Cyclone Replacement Cumberland U2 Secondary Superheater Replacement Browns Ferry Nuclear Margin Modifications

#### \$847 million

# **Key Takeaways (Operational Spending)**

Increased investments to:

- Improve material condition
- Support energy efficiency and demand response
- Reduce environmental impacts

# **Capacity Expansion**

## **Capacity Additions (Cumulative)**



## **Capacity Additions**



# **Capacity Expansion**

(\$ millions)	In- Service Date	MW	2010 & Prior	2011	Total Project
Lagoon Creek CC	2011	540	\$441	\$4	\$445
John Sevier CC	2012	878	\$389	\$314	\$818
Watts Bar Unit 2	2013	1,138	\$1,419	\$635	\$2,494
Bellefonte – Unit 1 Phase 2	2018	1,260	\$56*	\$248	TBD
Nuclear Uprates			\$97	\$14	\$436
Transmission				\$181	
AFUDC/Other				\$132	

\* Project-to-date spending on scoping, estimating, & planning

# Bellefonte

#### Supporting Bellefonte Technology Recommendation



Latest power supply plan shows TVA need for new capacity in 2018-2020 timeframe and BLN chosen as least cost alternative for portion of the need.

Final SEIS completed June 21. Bellefonte 1 is TVA preferred alternative

Detailed scoping, estimating, and planning for the project established a high confidence cost and



# Fiscal Year 2011 Scope

Reduces Project Risk and Preserves Completion Option



### **Contracts Provide Flexibility**

Contracts will be entered that provide flexibility to transition project to next phase

Several contracts will be entered during Fiscal Year 2011 that include terms and scope beyond Fiscal Year 2011, to preserve the option for the project to move forward to the final phase efficiently, if later decided

Termination provisions will be included in contracts

# **Financial Health**

#### **Net Book Value per Installed Capacity**



Data Source: 2009 Company 10-K Filings.

#### **Fuel and Purchased Power Cost per MWh**



Data Source: 2009 Company 10-K Filings.

#### **Total Capitalization to Total Assets**



2009 Company 10-K Filings.

Data Source:

Total capitalization includes debt, equity, and deferred taxes.

## **Financial Guiding Principles**

Retire debt over the useful life of assets

Only issue new debt for new assets

Use regulatory treatment for specific unusual events

Rate increases as necessary to fund operational spending

Evaluate rate actions to avoid significant rate volatility

# **Debt and Debt-Like Obligations**

(in billions)	FY10 Ending Debt (Forecast)	\$26.0
	New Borrowings:	
	Capacity Expansion	\$1.5
	Kingston	0.2
	Environmental Investments	0.4
	Refinancings	1.2
	Total New Borrowings	\$3.3
	Debt Paydown:	
	Nuclear Regulatory Asset	(\$0.4)
	Legacy Debt	(0.5)
	2009 Pension Contribution	(0.3)
	Maturing Debt	(1.2)
	Total Debt Paydown	(\$2.4)
	FY11 Ending Debt	\$26.9

# **Key Takeaways (Financial Health)**

### TVA has:

- Competitively installed asset base
- Improved and competitive capital structure
- Sound financial guiding principles
- Low cost of capital
- Superior credit rating

# **Risks and Challenges**

# **Risks and Challenges**

- Economic uncertainty
- Weather
- Hydro generation
- **Regulatory risks**
- Pension fund

# Recap and Recommended Action

# **Operating Budget Expenses**

(\$ millions)	
Operating Revenue	\$11,846
Operating Expenses	
Fuel & Purchased Power	4,344
Operations, Maintenance, and Other	3,437
Interest & Other	1,284
Tax Equivalents	567
Subtotal	9,632
Other Operating Cashflow	(154)
Operating Cashflow	\$2,060

# **Capital Budget**

(\$ millions)	
Operating Cashflow	\$2,060
Nuclear	1,258
Gas	318
Environmental	351
Transmission	262
Fossil	344
River Operations	77
Nuclear Fuel	304
Other	6
Total Capital Expenditures	2,920
Other Investing	61
Net Cashflow Prior to Financing	\$(921)

# Financing

Shortfall	<u> </u>
Subtotal	921
Other Financing	(74)
Debt Paydown	(2,285)
New Borrowings	3,280
Net Cashflow Prior to Financing	\$(921)
(\$ millions)	

No recommended base rate increase for October 1

# **Plan Summary**

<b>Discussion Topic</b>	Key Takeaway
Supply and Demand	Well Balanced
Fuel and Purchased Power	Prices Increasing
<b>Operational Spending</b>	Asset Investments
Capacity Expansion	Addressing Future Needs
Financial Health	Appropriately Capitalized Principles Based
<b>Risks and Challenges</b>	Economic and regulatory uncertainty Pension Challenges

Approve the 2011 budget that includes:

• Operational Spending of \$9.632 billion

Approve Capital spending of \$2.920 billion including:

• Bellefonte Unit 1 Phase 2

Approve Fuel Contracting Plan including:

- Gas Transportation Texas Gas Transmission LLC
- Nuclear fuel enrichment GE Hitachi

Approve Financial Guiding Principles

# **Financial Shelf**

## Topic

TVA's authorization to issue power bonds and related interest rate hedges expires at the end of each fiscal year and needs to be renewed for the following year

# Background

Power bonds are typically issued to:

- Refinance existing debt
- Fund new capacity

Interest rate hedges may be used to reduce exposure to fluctuating interest rates

Issuing individual bonds requires:

- Notification of Board Finance, Rates, and Portfolio Committee
- Approval of Chief Executive Officer and Chief Financial Officer

Approve the issuance of up to \$3.5 billion of long-term bonds and the ability to utilize interest rate hedges in fiscal year 2011


## Topic

- New wholesale rate structures to be effective in April 2011
- Optional Rates for Large Direct-Serve and Distributor-Served Customers from October 2010 to March 2011
- Revised Fuel Cost Adjustment (FCA) formula in October 2010 to more accurately capture seasonal fuel costs

Since 1992, TVA has billed its distributors based on the demand and energy usage of the distributor's retail customers

TVA issued a Rate Change Letter to its distributors on July 8, 2009, to implement new wholesale rate structures, including time-of-use rates

TVA has had on-going discussions with customers regarding the rate change since April 2008

At its July 26, 2010, Board Meeting, TVPPA accepted this proposal

## Why change TVA's Rates?

Provide the proper price signals

Encourage demand response, energy efficiency, and smart grid technology

Provide customers with opportunities to save on their energy costs

Keep bills as low as feasible

### What are Time-of-Use Rates?

Time-of-Use (TOU) rates contain pricing differences between seasons of the year and hours of the day

TVA has conducted several successful pilot programs with time-of-use rate structures

TOU rates provide incentives for customers to reduce peak demand and improve the load factor of the TVA system

315 utilities across U.S. currently offer TOU rates

## Hourly Energy Costs Vary by Time of Day

**TVA Hourly Marginal Energy Cost** 



#### **Our Neighbors Are Addressing These Same Challenges**



## Wholesale Rate Change Proposal

In April 2011, there will be two wholesale rate options:

- Wholesale Time-of-Use (TOU)
- Wholesale Demand & Energy (D&E)

Segmentation of large customers (> 5 MW) into separately metered rate

- TOU Rates with more significant price signals
- Seasonal Demand & Energy rates with demand response options

All distributors will be participating in TOU rate by October 2012

• TVA will continue to discuss other rate options with distributors

With the transition to the new rate structure in April, TVA needs to make adjustments to both the FCA and the large customer rates in October

For the FCA, TVA will implement a change in the formula so that the resulting rate more closely reflects seasonal fuel costs

For the large customers (> 5 MW), optional rates will be available in October 2010

## Recommendation

- New wholesale rate structures to be effective in April 2011
- 2. Optional Rates for large customers from October 2010 to March 2011 (> 5 MW)
- 3. Revised Fuel Cost Adjustment formula in October 2010 to reflect seasonal fuel costs

Ash and Gypsum Facility Contracts

## Topic

Work required to go to dry handling processes for ash and gypsum and to close all wet impoundments

Includes both engineering design services and coal combustion product management services

### Ash Management Engineering Services Contracts

Board approval is requested to supplement TVA's existing contracts for engineering design services for TVA's ash management program with:

Stantec Consulting Services, Inc.

**URS** Corporation

CDM Federal Services, Inc.

Geosyntec Consultants, Inc.

AECOM USA, Inc.

The first four firms will supply engineering support services necessary to convert TVA's coal plants to dry ash handling processes and to close all existing wet ash impoundments

AECOM USA, Inc. will provide peer review of the services provided by the other four firms

### **Coal Combustion Product Management Services**

Board approval is also requested to award individual contracts for Coal Combustion Product management services at various fossil plants to:

Charah, Inc.

Charleston Construction Company, Inc.

Morgan Corporation

Trans Ash Inc.

Under the proposed agreements, Charah and Trans Ash will provide routine ash handling services for specific fossil plants, as needed

In addition, all four companies will be allowed to bid on capital and operation and maintenance (O&M) Coal Combustion Product construction projects

No minimum amount of work under these contracts will be guaranteed

Recommend that the Board authorize:

- Extending the term and increase the aggregate amount of the engineering contracts
- Authorize ash handling contracts to be allocated among four contractors

## **People and Performance**



## Fiscal Year 2011 Annual Incentive Goals

### Topic

Annual Incentive programs form the basis for evaluating and rewarding employees for TVA's Fiscal Year 2011 performance

### For Board Consideration

Approve proposed Winning Performance measures and targets for Fiscal Year 2011

Winning Performance provides incentives to TVA employees for Fiscal Year 2011 goals

Employees are rewarded for meeting both corporate and organization specific goals

Annual incentives for executives are aligned with employees and include specific individual performance goals

## **TVA's Performance Focus**

#### Rates

- Live within our means
- Keep bills as low as feasible

#### Reliability

- Improve plant reliability and efficiency
- Maintain transmission system reliability

#### Reputation

#### Environment

Demonstrate proactive
environmental leadership

#### Employees

 Cultivate a safe and organizationally healthy workplace environment

#### Stakeholders

 Enhance TVA's reputation and contribute to economic development

## **Fiscal Year 2011 Annual Incentive Plans**

#### **Proposed Corporate Measures**

	Weight	Threshold	Target	Stretch
Equivalent Availability Factor	50%	84.1%	86.0%	87.9%
<b>Net Cash Flow</b> (\$ Millions)	50%	\$150M less than Budget	Budget	\$150M more than Budget

# Approve the proposed Fiscal Year 2011 Annual Incentive Plan measures and goals

## Audit, Risk, and Regulation



## Enterprise Risk Management Policy

## Topic

Considered best practice to have a Board approved enterprise risk management policy

Management has developed a policy based on sound risk management practices for Board consideration

### Background

2004 TVA Board established the position of Chief Risk Officer

2005 TVA Board established the Enterprise Risk Management Council

TVA risk management practices and approaches have been maturing

## Background

### **Enterprise Risk Management Policy**

- Board adoption is recommended as a best practice to provide appropriate guidance to the organization
- Provides overarching guidance for all risk management activities
- Establishes risk governance, general processes and roles and responsibilities
- Requires functional risk management policies and processes

Adopt the Enterprise Risk Management Policy

Delegate authority to Enterprise Risk Council to amend the ERM Policy only after formal consultation with the Board Committee that reviews TVA's risk management functions

Delegate authority to Enterprise Risk Council to approve subordinate risk policies

Delegate authority to the Chief Executive Officer to appoint TVA's Chief Risk Officer in the future



## Customer and External Relations



## Chickamauga Marina – Commercial Recreation Lease





19-year commercial recreation lease affecting approximately 14.7 acres in Hamilton County, Tennessee, on Chickamauga Reservoir

## Fort Loudon Marina – Commercial Recreation Easement






30-year commercial recreation easement and a 30-year nonexclusive access road easement affecting approximately 9.5 acres in Loudon County, Tennessee, on Fort Loudoun Reservoir