Board Meeting

August 25, 2016

Knoxville, Tennessee

President's Report

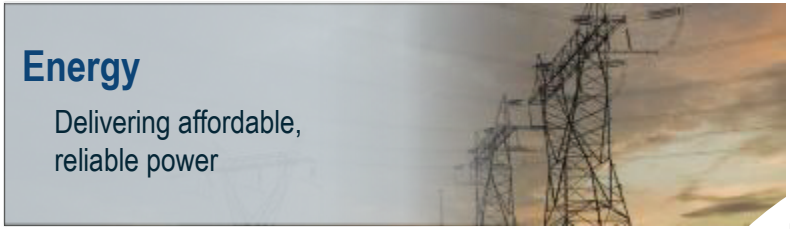
August 25, 2016

BILL JOHNSON
President and CEO

Randy Love

Randy Love

Mission to Serve



Energy

Delivering affordable, reliable power

Environment

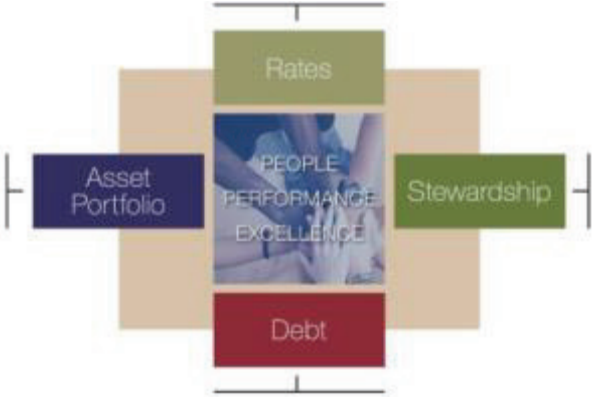
Caring for our region's natural resources

Economic Development

Creating sustainable economic growth

Meet reliability expectations & provide a balanced portfolio

Maintain low rates



Live within our means

Be responsible stewards

We're in Good Financial Health

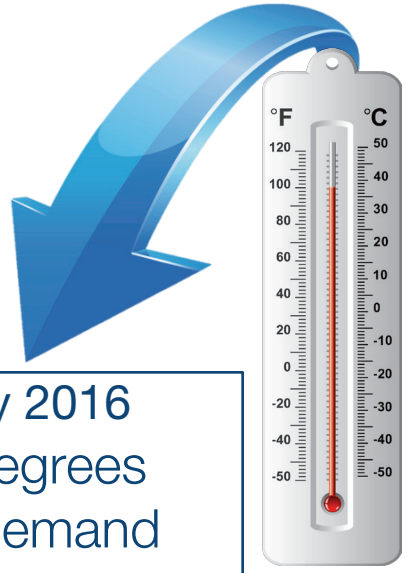
We are:

- Managing debt and cash flow
- Delivering low-cost, reliable power
- Investing in the power system

Our Market is Changing

Local Power Companies
Utilities across the nation
are all facing a challenge.

Our Market is Changing



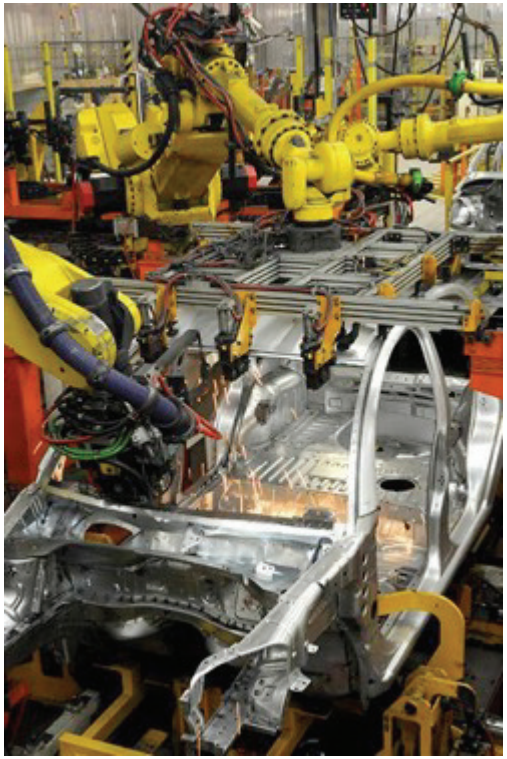
July 2007
~ 96 Degrees
Peak
Demand
32,000 MW

July 2016
~ 96 Degrees
Peak Demand
29,751 MW

Peak 7% lower despite 9 years of regional growth

Retirement System

Energy | Environment | Economic Development



Energy

Nuclear – Watts Bar Unit 2

Energy

Paradise

Energy

Allen

Energy

Gallatin

Energy

Renewables

Energy

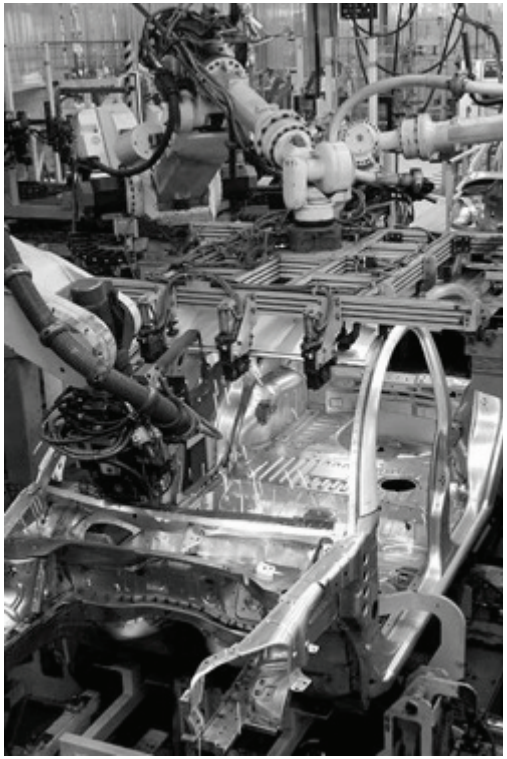
TVA announces newest business unit

Consumers and businesses are demanding cleaner and greener energy, and the utility industry is evolving to meet those needs. As TVA also evolves to meet those needs, we will see impacts to the way we do business in the future. We will continue to adapt to remain competitive and operate efficiently as we serve our customers and the people of the Tennessee Valley.

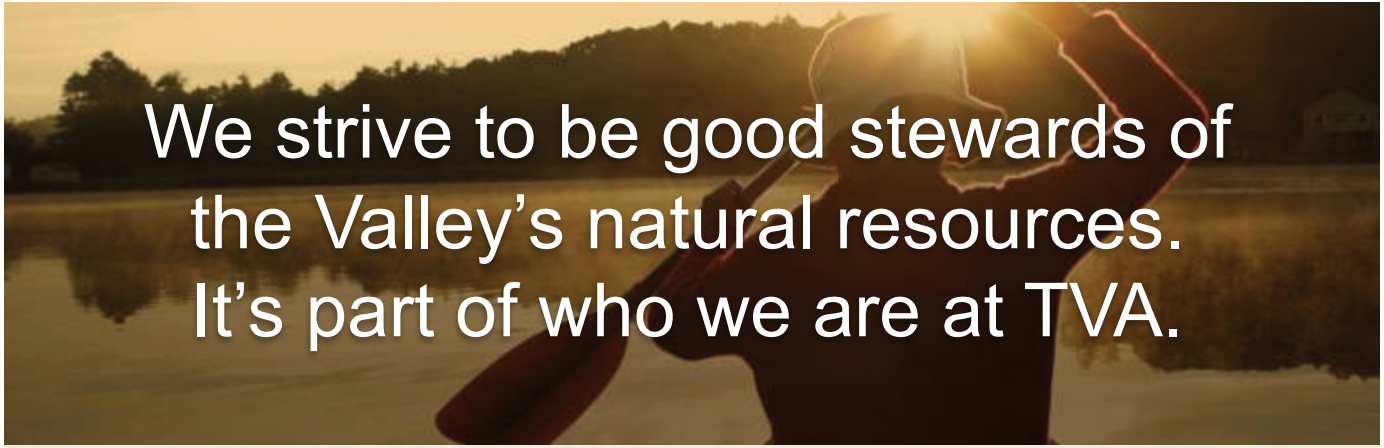
Distributed energy resources, or DER, comprised mainly of energy efficiency programs, pricing products, demand response programs and renewables are a growing part of TVA's generation portfolio. DER programs and products are more prevalent in other parts of the country and our desire is to be ready to manage these proactively at TVA.

This shift in our business makes it more critical than ever for us to align with our customers on execution and delivery of new products and programs. We must also continue to forecast the demand for these programs and products, what our portfolio needs are and how to utilize our assets most effectively. To best manage the way we do business in the DER environment, at the beginning of the fiscal year TVA will form a new business unit, Distributed Energy Resources, which will be part of our External

Stewards of the Environment



Resource Stewardship



293,000 *acres of* PUBLIC LAND

650,000 *acres of* RESERVOIR SURFACE WATER

11,000 *miles of* PUBLIC SHORELINE

11,500 *archaeological* SITES

157 *natural* AREAS

150 *miles of* TRAILS

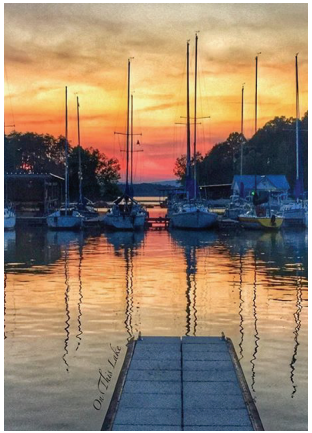
80 *recreation* AREAS

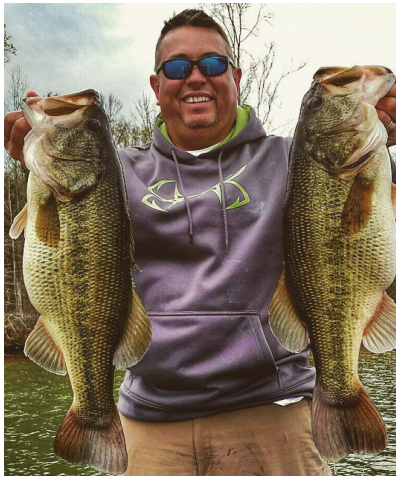
Environment

Public Meetings

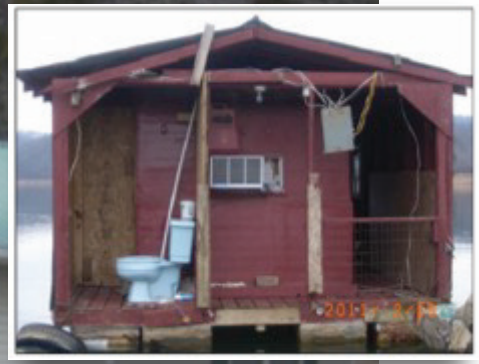
Stewards of the Environment

Recreation

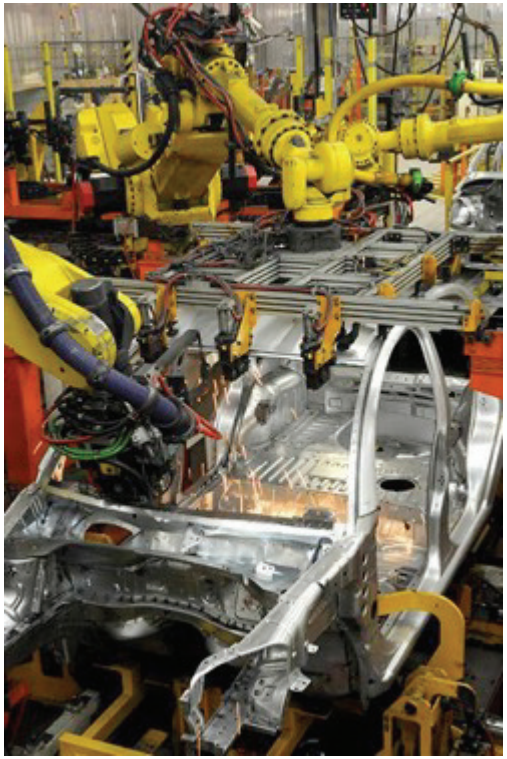




Floating Houses



Economic Development

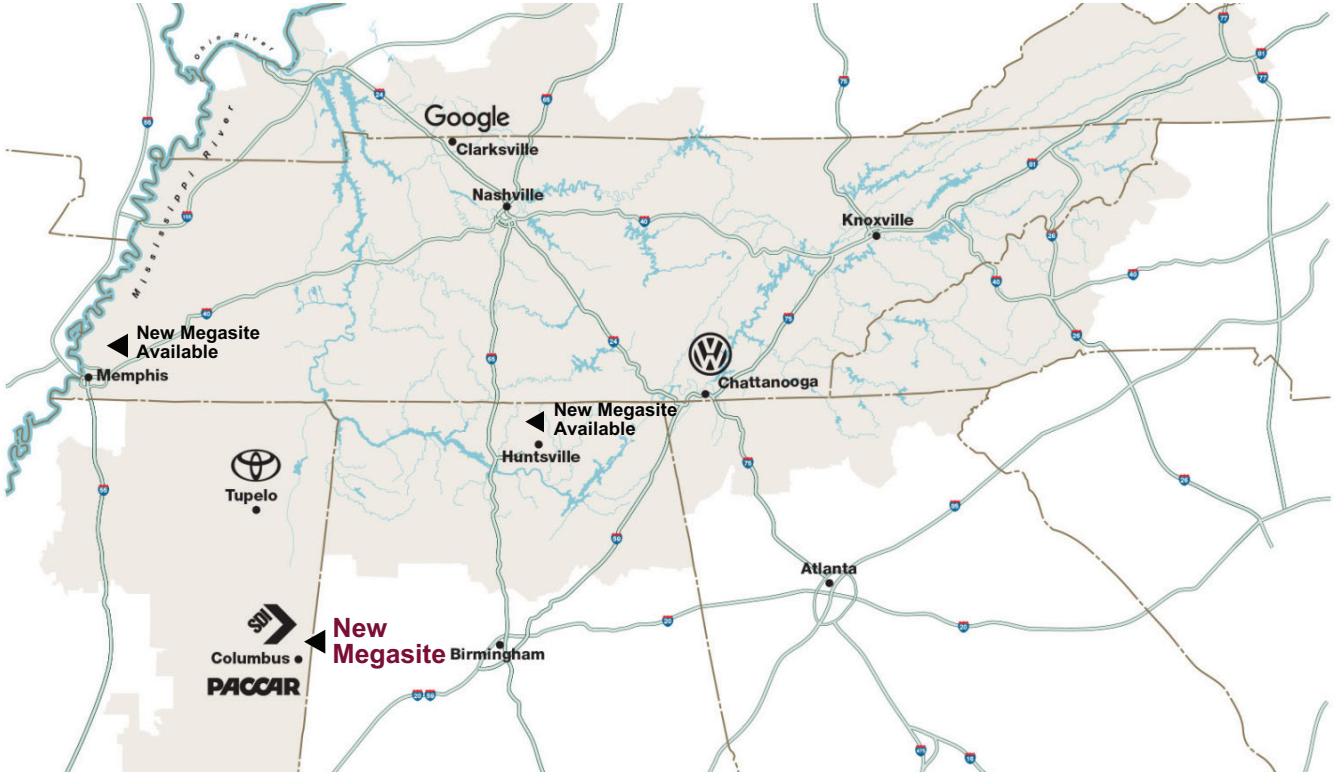


Stewardship – Economic Development

Stimulating economic development and investment in the Valley

- *FY 2016 through June*
- **64,900** jobs created and/or retained
- **$7.5 billion** of capital investment

New Megasite



Military Bases

Stimulating economic development and investment in the Valley

The TVA Act

Norris Dam

Norris Celebration

A practical symbol of a better life...

A Better Life and Greater Opportunity

President's Report

August 25, 2016

BILL JOHNSON
President and CEO

TVA Retirement System

REBECCA TOLENE
Deputy General Counsel

Purpose

- On August 8, the TVA Retirement System Board of Directors approved amendments to the TVARS Rules and Regulations and the 401(k) plan

- The TVA Board has 30 days to review the proposed amendments

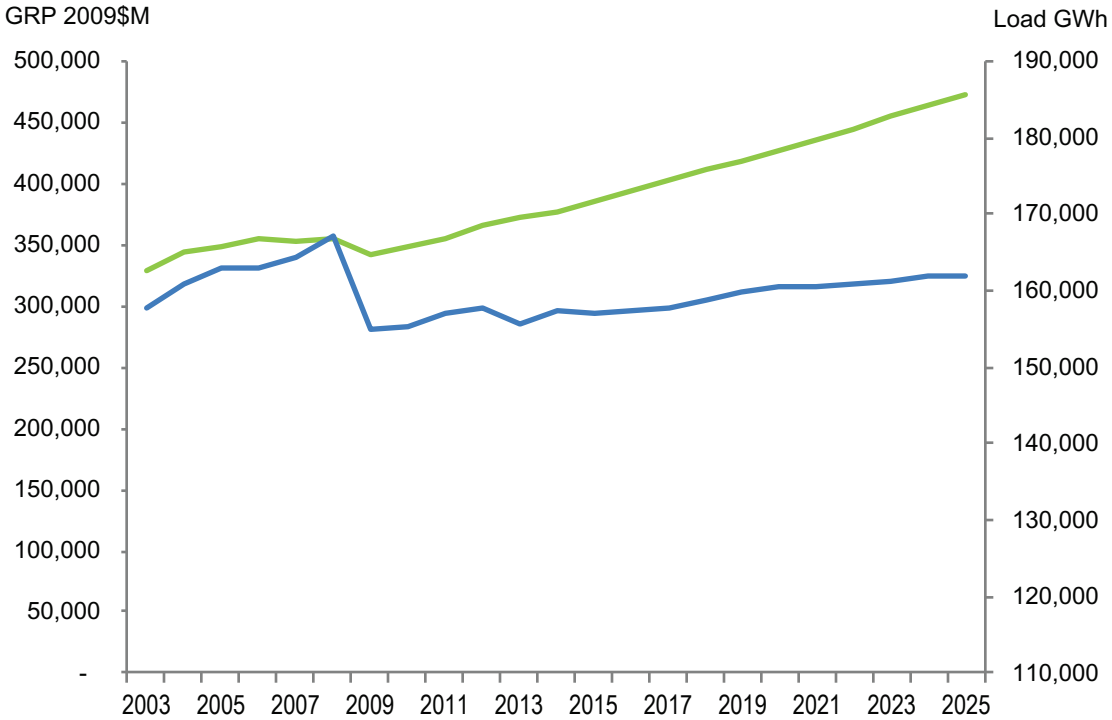
What's Changed? Pension System

Sept. 30, 2000		Sept. 30, 2015
$5.5 billion	Plan Liabilities	$12.8 billion
$7.3 billion	Plan Assets	$6.8 billion
21,055	Retiree Population	23,860
19 years	Life Expectancy at 65	23 years
$289 million	Annual Benefit Payments	$690 million
13.0%	Annualized Return Last 15 Yrs.	4.5%
7.0%	Corporate Bond Yields	2.3%
3.5%	Inflation Rate	0.0%
$716 million	TVA Contributions Last 15 Yrs.	$2.181 billion

Important to position system for healthier future now.
Other pension systems having to take more draconian steps.

Load Growth Down Despite Economic Growth

Gross Regional Product and TVA Load

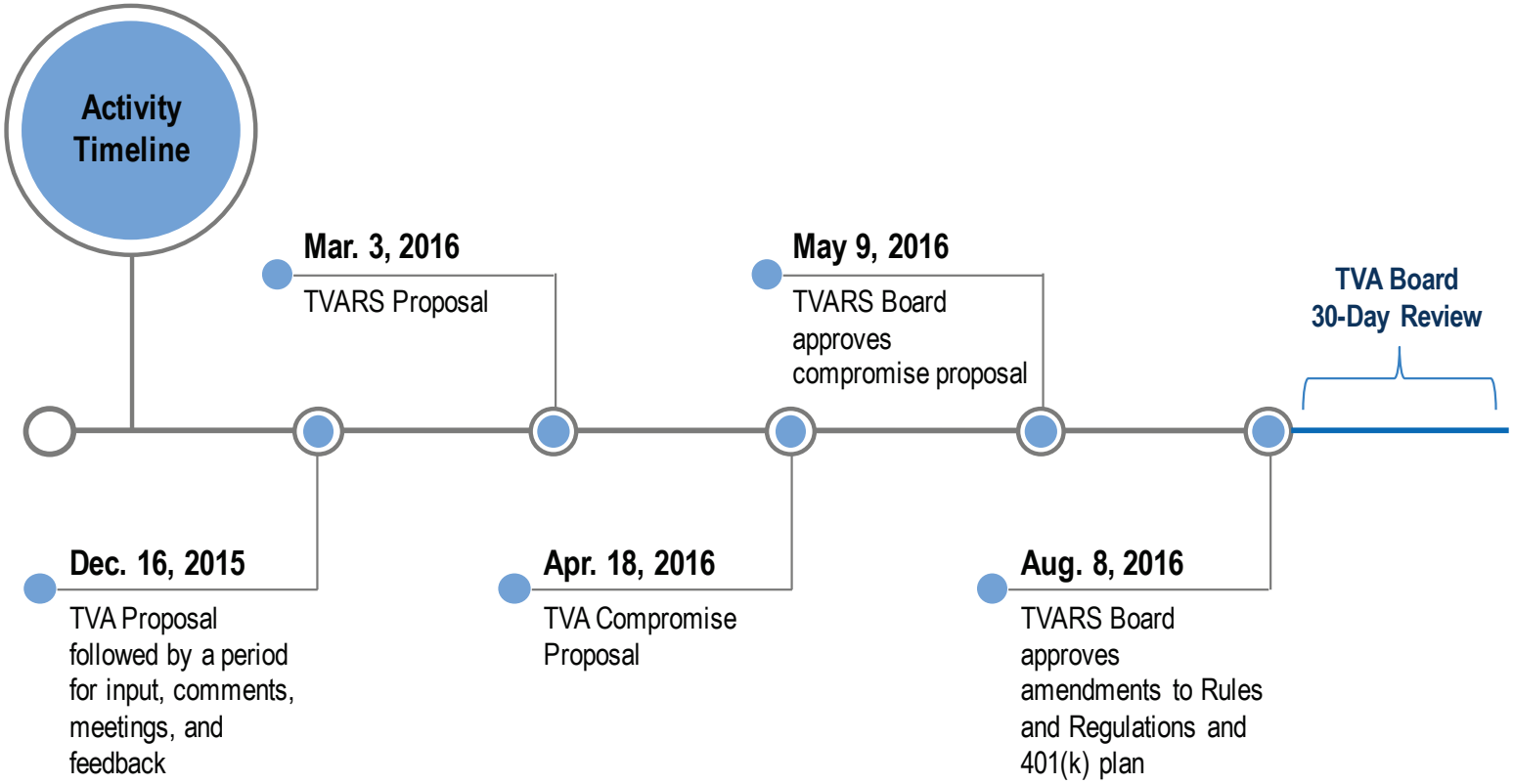


Changing future of utility industry means we have to take steps to protect the System for the long-term.

TVA Board Goals

- Improve long-term health of System by reducing cash flow pressure on System assets and providing higher minimum contributions
- Implement changes that incorporate current System realities (funded status, demographics, expected returns, inflation, mortality)
- Mitigate impact to retirees and long-term employees
- Provide increased certainty to retirees and employees

Compromise and Partnership

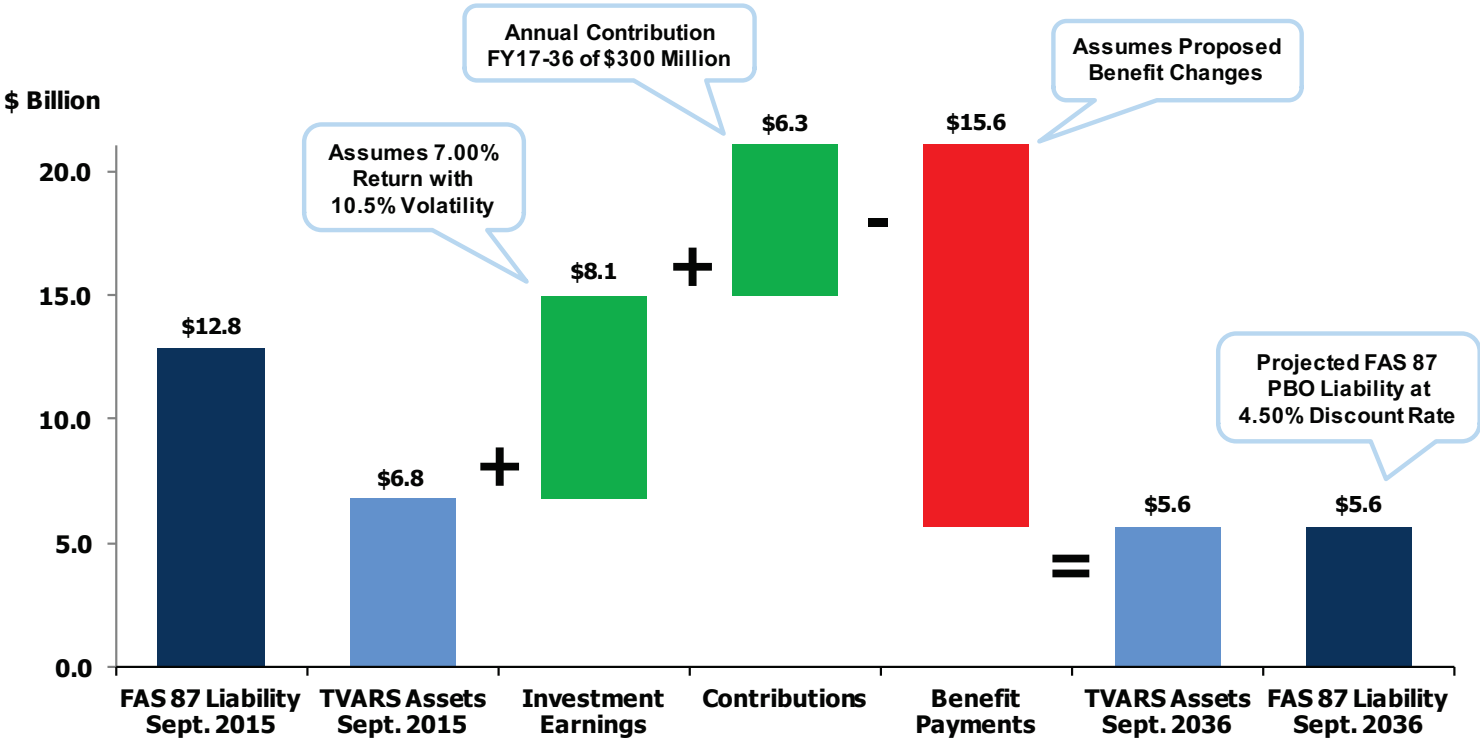


Compromise Proposal

- Vested COLA at CPI minus 0.25% (COLA cap moves from 5-6%)
- Funding commitment of $300M annually for 20 years or sooner if fully funded
- Cash Balance to Defined Contribution
  - Post-January 1, 1996, participants with less than 10 years of service
    401(k) 6% automatic contribution and 100% match up to 6%
  - Post-January 1, 1996, participants with more than 10 years of service
    3% automatic cash balance contribution
    401(k) 3% automatic contribution and 75% match up to 6%
- COLA salary caps for Executive Level IV and SERP
- Raise COLA eligibility age to 65 for those less than 50 years old
- 7th member a retiree
- Interest crediting rates for benefits more aligned with market
- Increased lump sum payout option
- No further fixed fund contributions
- Cap supplemental benefit
- TVA review of asset allocation changes

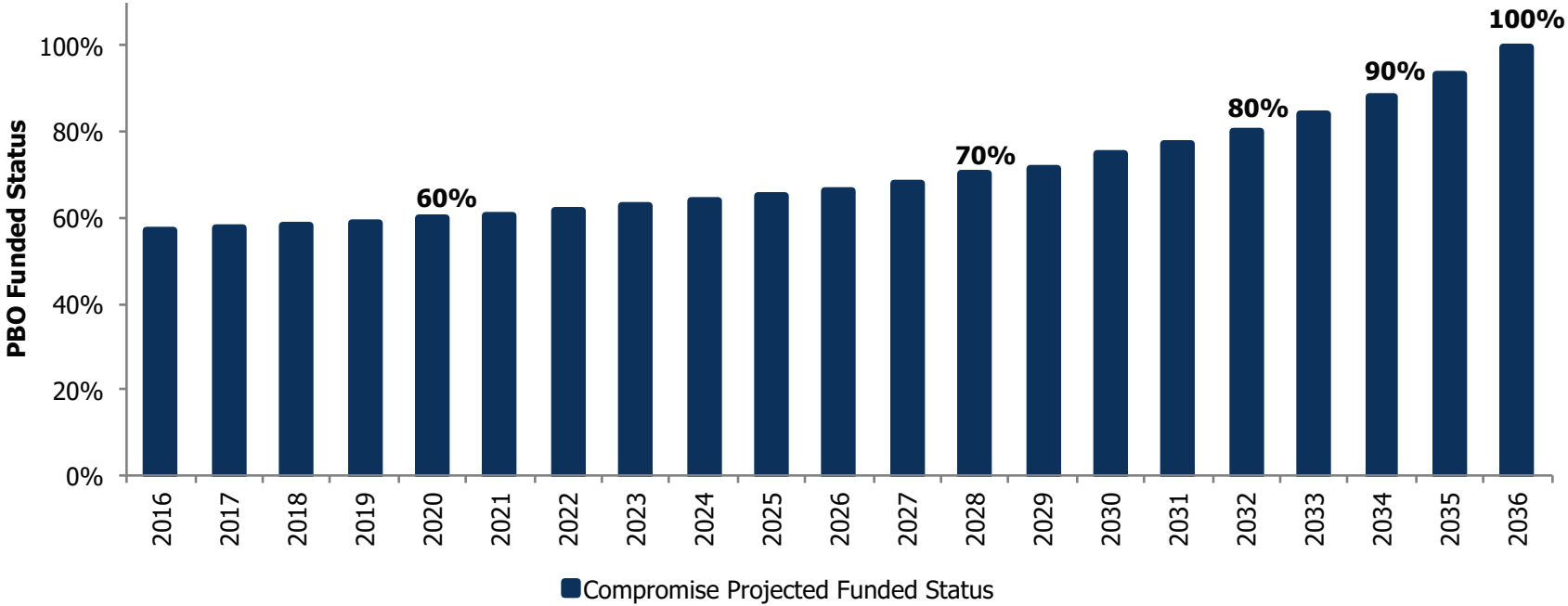
Cash Flow Projections – FY16 to FY36

Simulation analysis projects funded status in FY36 at 50% confidence level.



*Willis Towers Watson benefit payment data assumes benefit changes

Funded Status Projections – FY16 to FY36



Improved funded status will take time.

Assumes 4.5% discount rate, TVARS asset returns of 7% with 10.5% volatility
50th Percentile results

Recommendation

- Approve amendments of the compromise proposal
  - Provide increased certainty to employees and retirees
  - Put the Retirement System on a path to improved funding levels

TVA

Nuclear Oversight Committee

Watts Bar 2

Finance, Rates, and Portfolio Committee

FY 2017 Financial Plan and Budget

JOHN THOMAS

Executive Vice President
and Chief Financial Officer

Overview

Discussion Topic	Key Takeaway
FY16 Update	Lower revenue due to weather Lower overall cost
FY17 Planning	Live within our means Improve rate competitiveness Reduce debt
Rate Outlook	Recommending small increase

Fiscal Year-to-Date June 2016

Net Income: $572 million ($331M favorable to budget)

Base Revenues ($27M below budget)

- Mild Winter partially offset by warm start to summer

Operating & Maintenance Expenses ($24M favorable to budget)

Interest Expense ($167M favorable to budget)

- Lower debt rates and additional AFUDC

Q3 Summary Income Statement

$ million	FYTD 2016 Actual	FYTD 2016 Budget	FYTD 2016 Variance	FYTD 2015 Actual	FYTD 2015 '16 v '15
Operating Revenue	**$ 7,330**	**$ 7,655**	**$ (325)**	**$ 7,832**	**$ (502)**
Fuel & Purchased Power	2,112	2,460	348	2,480	368
Total O&M	2,086	2,110	24	2,083	(3)
Taxes, Depreciation, Other	1,720	1,837	117	1,798	78
Interest	840	1,007	167	862	22
Net Income (Loss)	**$ 572**	**$ 241**	**$ 331**	**$ 609**	**$ (37)**

Q3 Summary Cash Flow Statement

$ million	FYTD 2016			FYTD 2015	
Net Cash Provided by / (Used in)	Actual	Budget	Variance	Actual	'16 v '15
Operating Activities	$ 1,878	$ 1,802	$ 76	$ 2,016	$ (138)
Investing Activities	(2,253)	(2,307)	54	(2,690)	437
Financing Activities	376	505	(129)	674	(298)
Net Change in Cash & Cash Equivalents	**1**	**-**	**1**	**-**	**1**
Ending Cash & Short-Term Investments	301	300	1	500	(199)
FY Debt and Financing Obligations	**$ 26,423**	**$ 26,956**	**$ (533)**	**$ 26,711**	**$ (288)**

FY 17 Budget
and Business Plan

Our Mission and Strategic Imperatives

Why We Are Here

How We Achieve Sustainability

TVA Mission

Energy

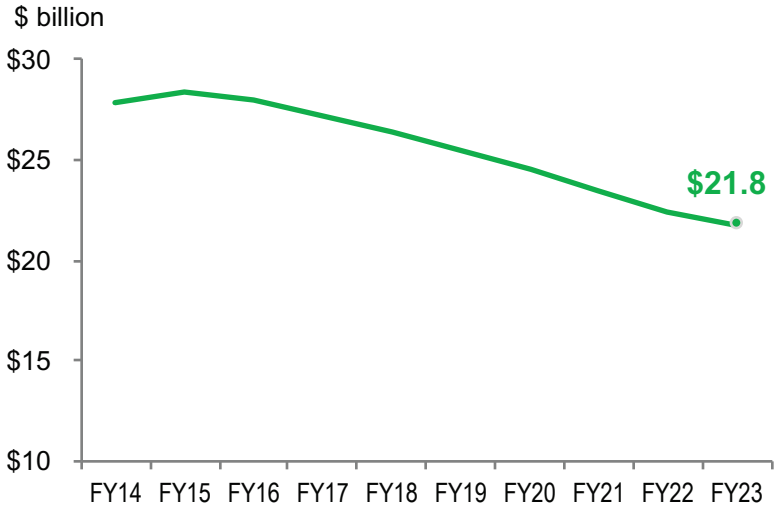
Environment

Economic Development

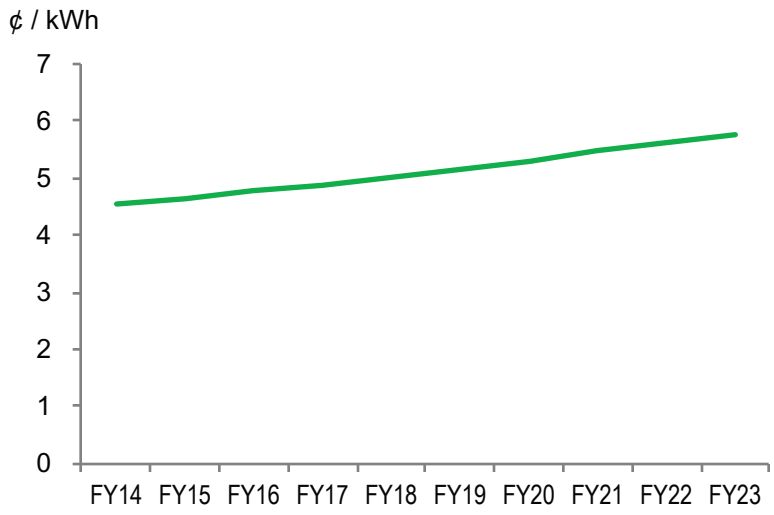
Strategic Imperatives

Rates and Debt – FY14 Board Approved Plan

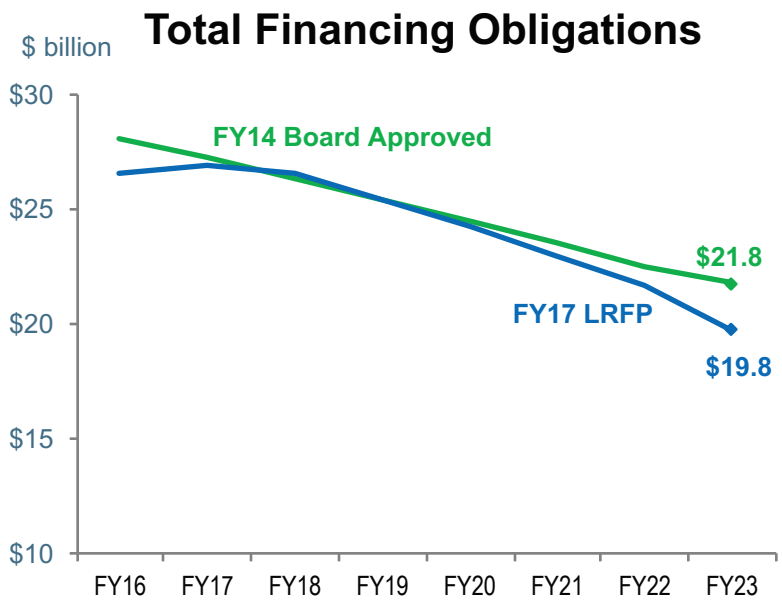
Total Financing Obligations

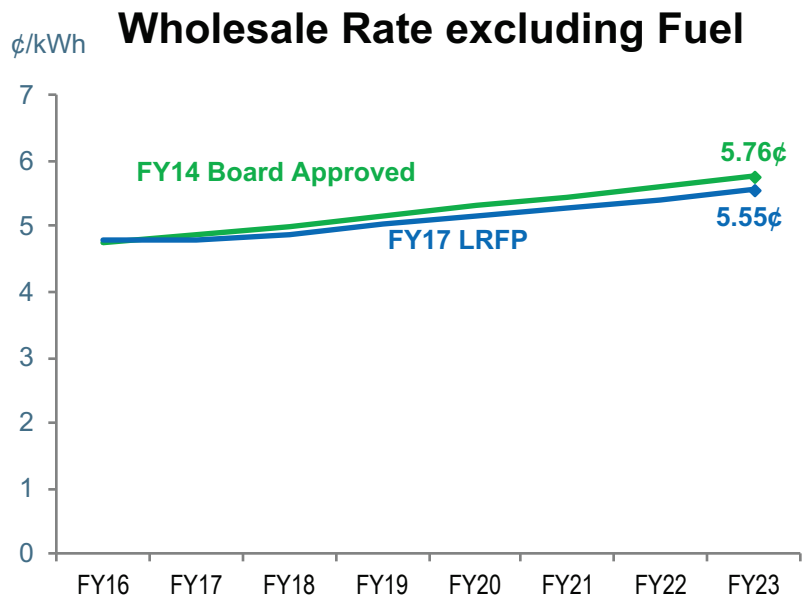


Wholesale Rate excluding Fuel

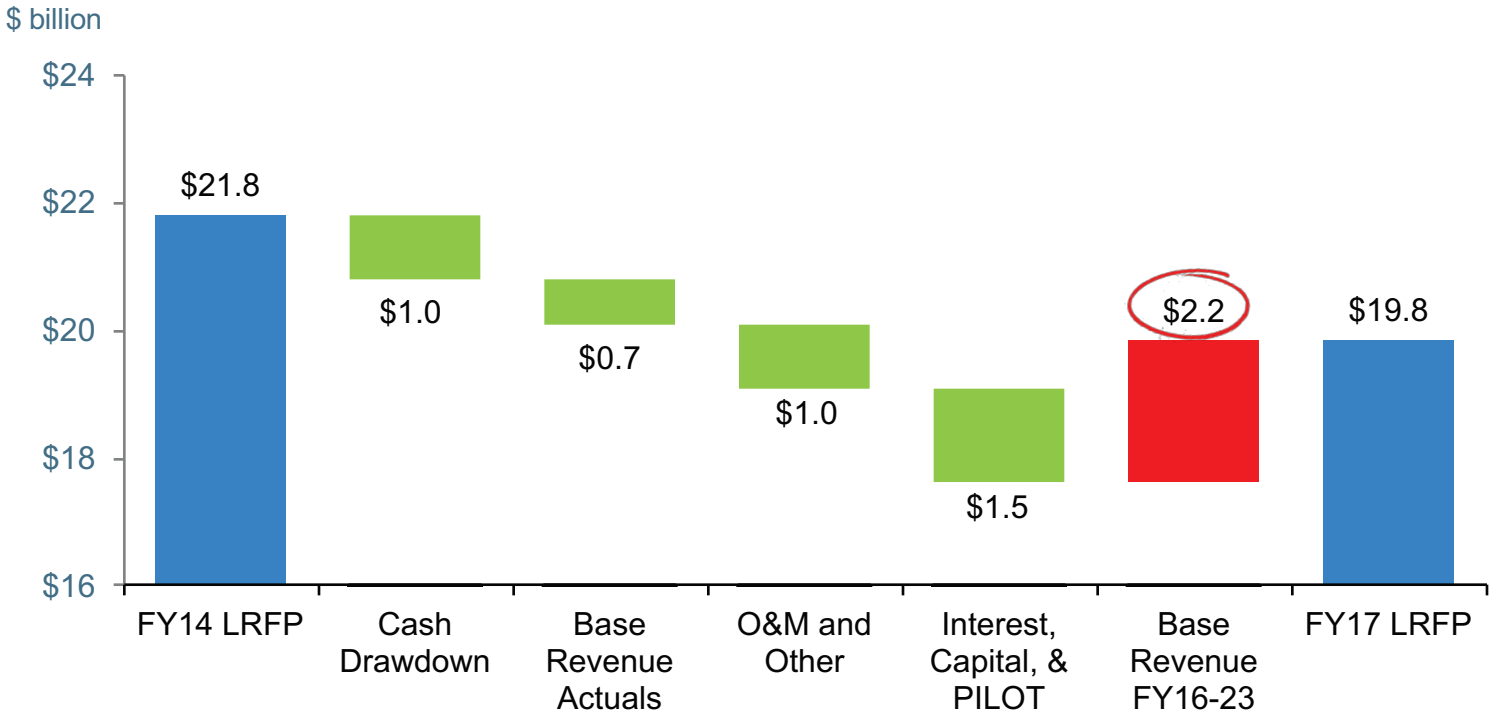


Balancing Rates and Debt





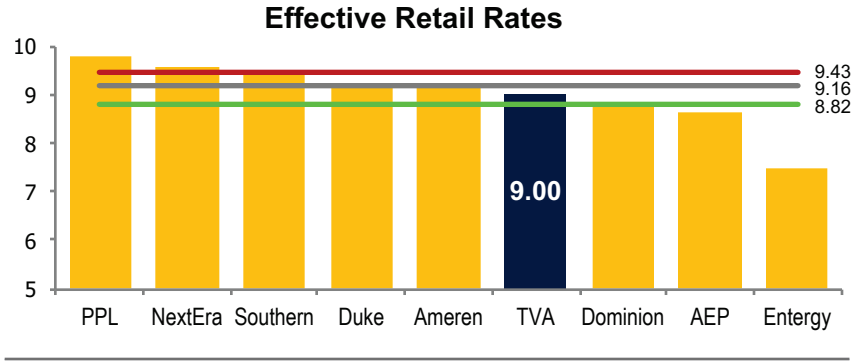
FY23 Total Financing Obligation Reconciliation

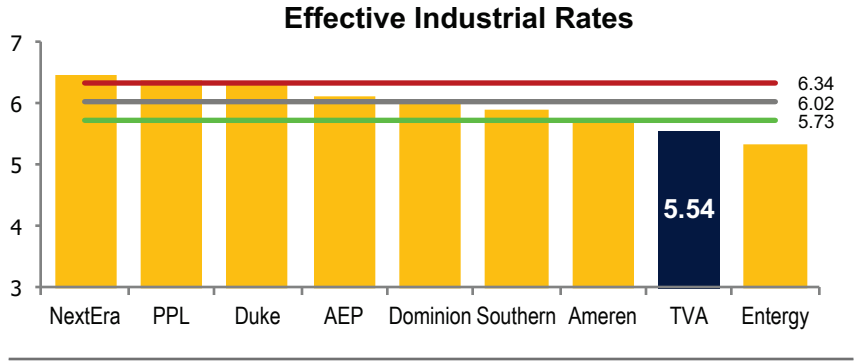


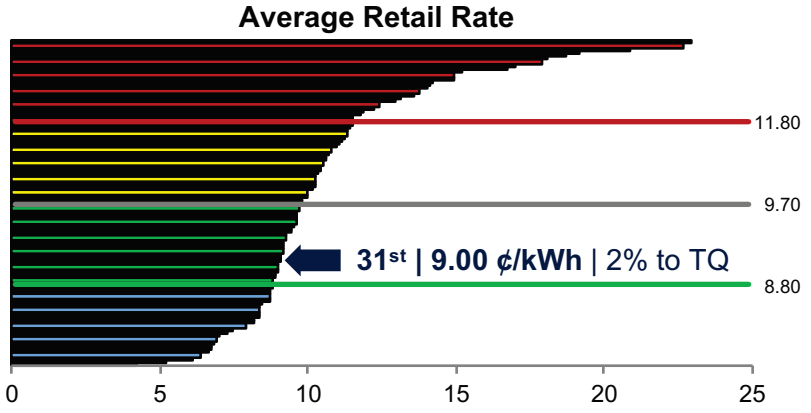
Balance Sheet

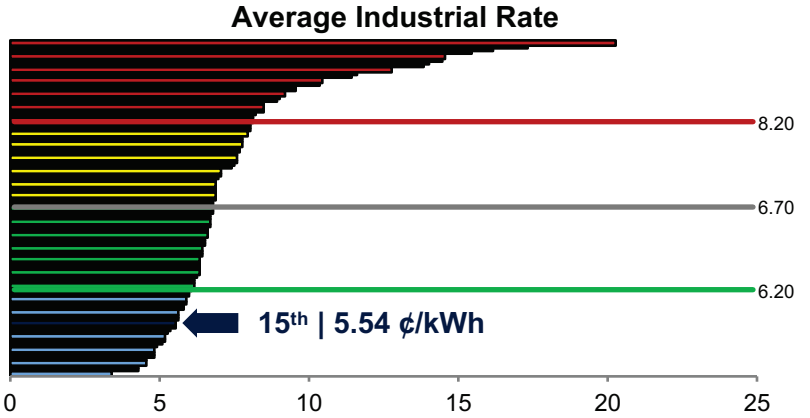
$ million	FY13	FY23P
Assets:		
Current Assets	$ 4,906	$ 5,145
Property, Plant & Equipment	29,923	36,698
Investments	1,701	2,542
Regulatory and Other Long-Term Assets	9,576	7,676
Total Assets	**46,106**	**52,061**
Liabilities & Capitalization:		
Current Liabilities	4,982	3,510
Other Liabilities	11,851	11,456
Long Term Debt	23,626	19,671
Total Liabilities	40,459	34,637
Proprietary Capital	5,647	17,424
Total Liabilities & Proprietary Capital	**$ 46,106**	**$ 52,061**
Proprietary Capital / Total Liabilities	14%	50%

Improving Retail Rate Competitiveness



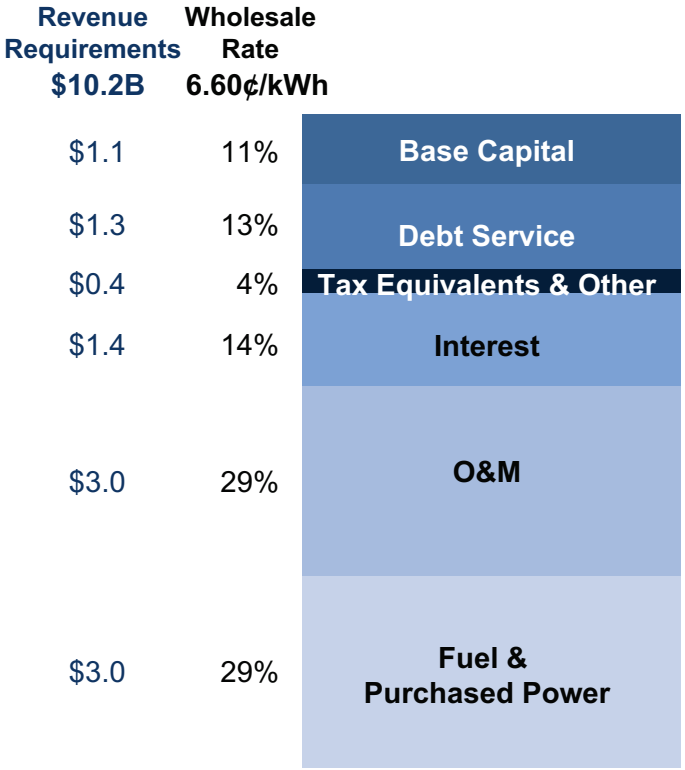






12-Month Rolling Average (¢/kWh) May 2015 - Apr 2016 -Source: EIA-826 & ESS

TVA Cost Structure



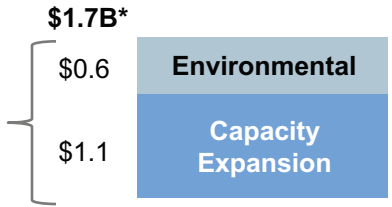
Efforts to Manage Cost

Manage capital cost, which is recovered over the life of the asset

Reduce TVA debt and use lower cost financing

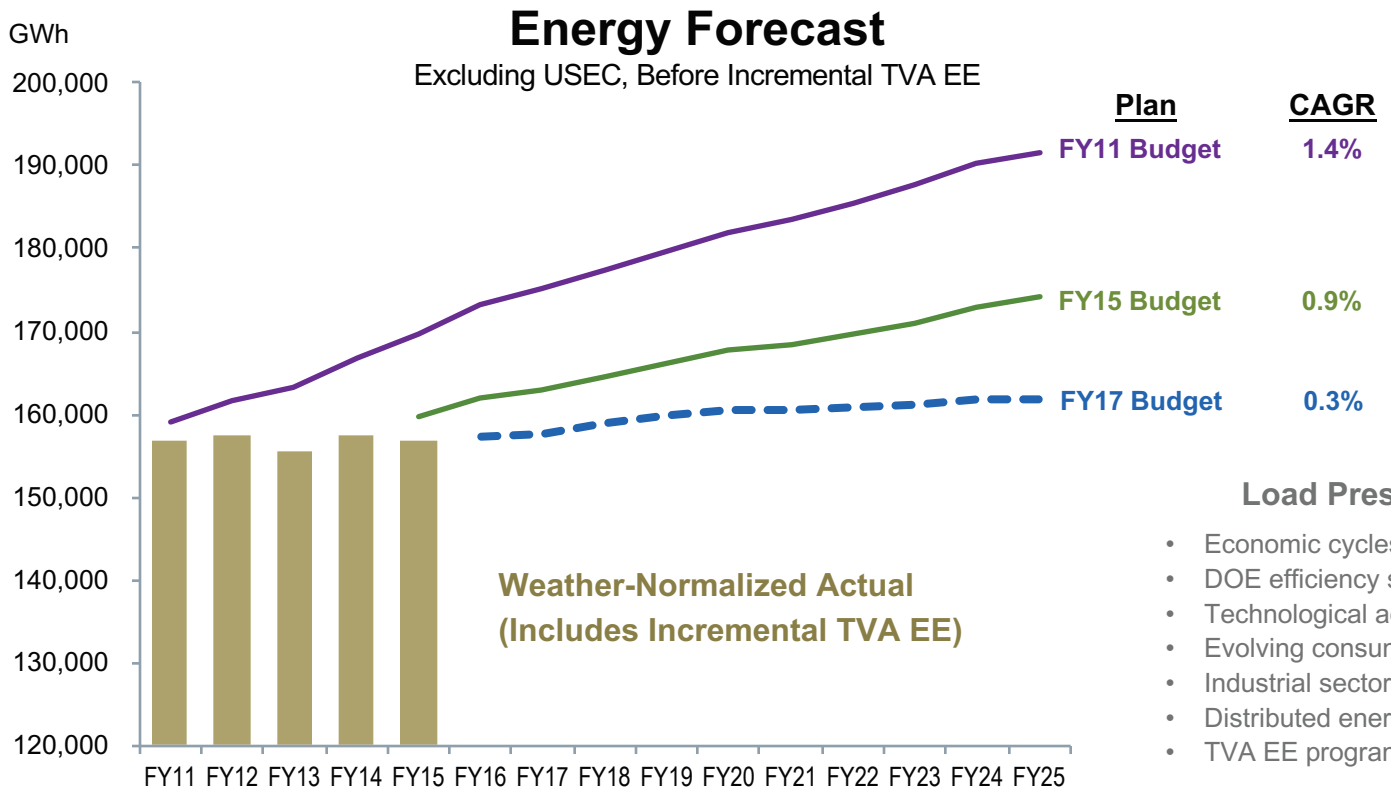
Continue pursuing O&M efficiencies

Continue to optimize dispatch, run lower cost units and improve availability



*Includes Kingston Ash, AROs, and BLN Reg Asset

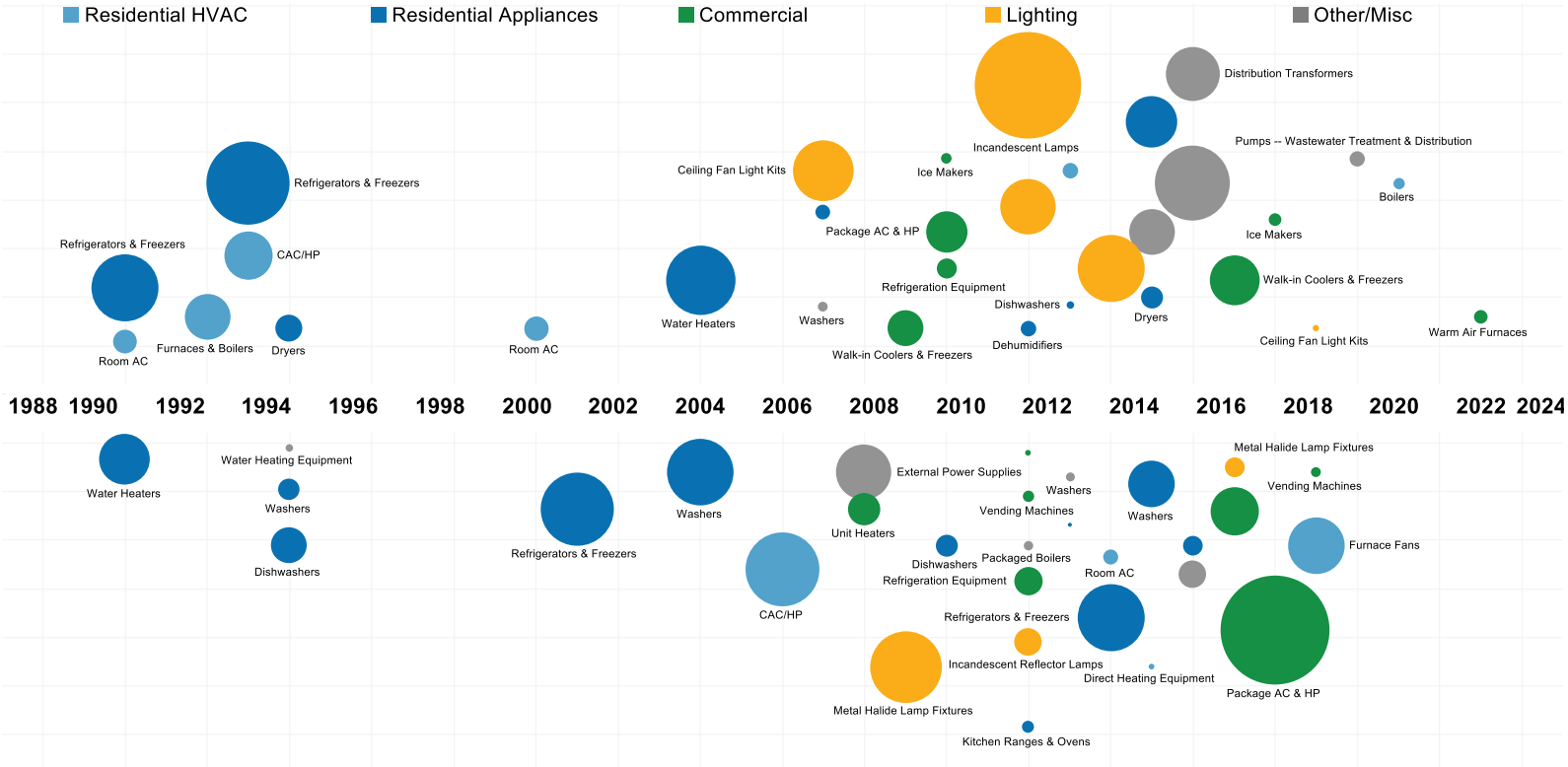
Lower Growth Expectations



Load Pressures

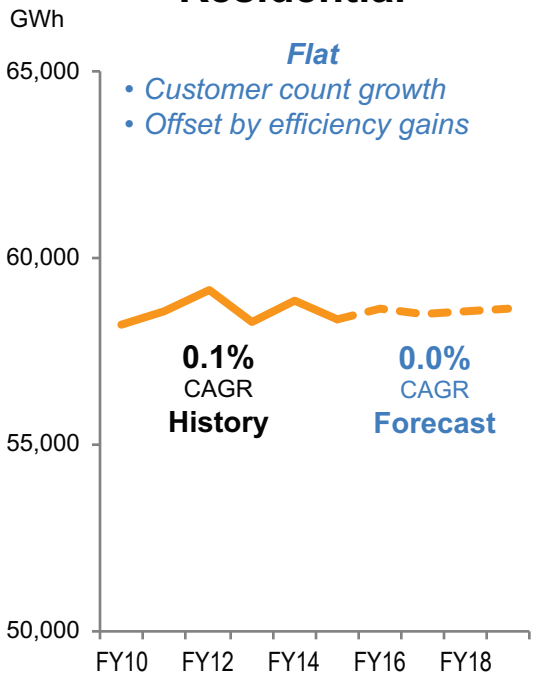
- Economic cycles
- DOE efficiency standards
- Technological advances
- Evolving consumer behaviors
- Industrial sector risks
- Distributed energy resources
- TVA EE programs

DOE Standards are Growing in Volume

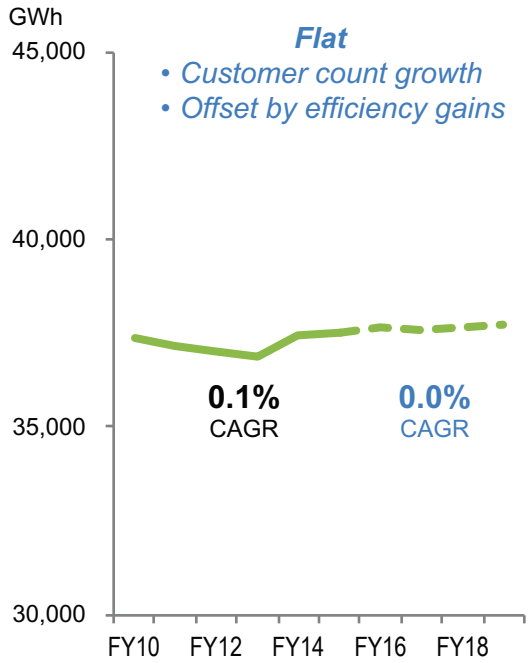


Energy Sales Trends

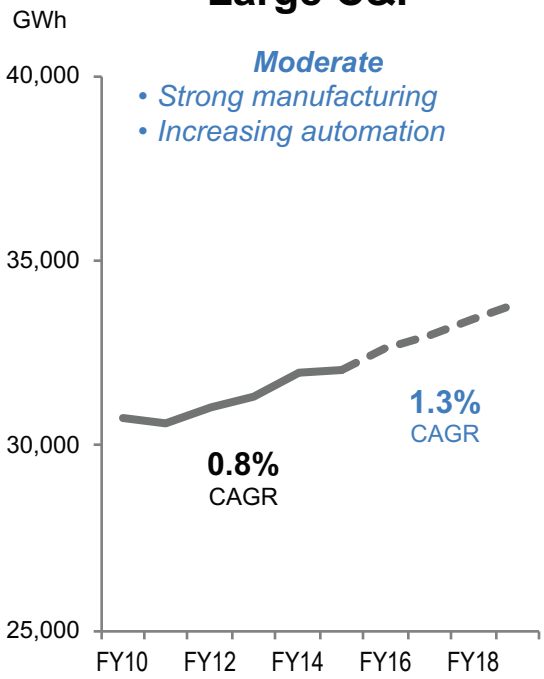
Residential



Small C&I

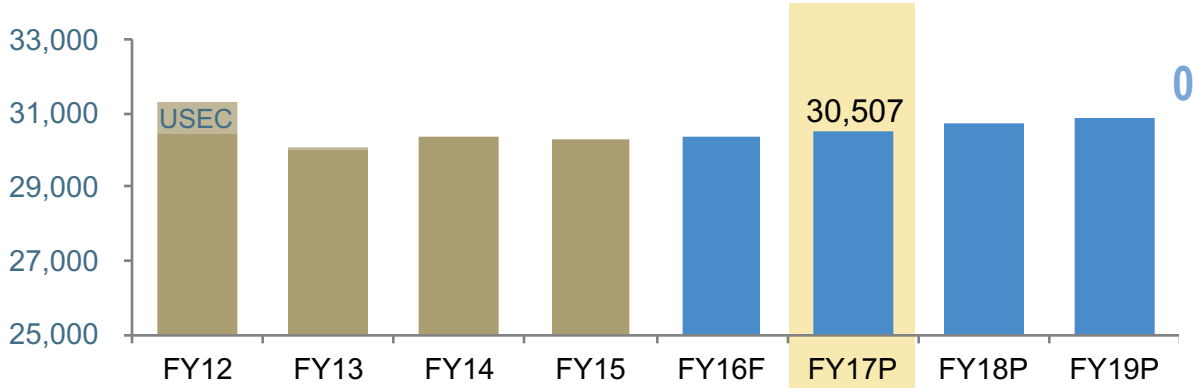


Large C&I



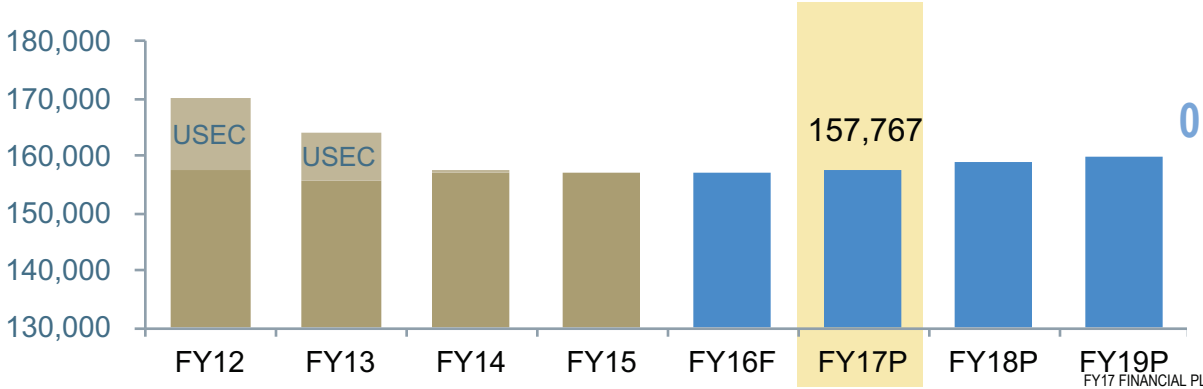
Annual Peak & Energy (Weather-Normalized)

Peak
MW



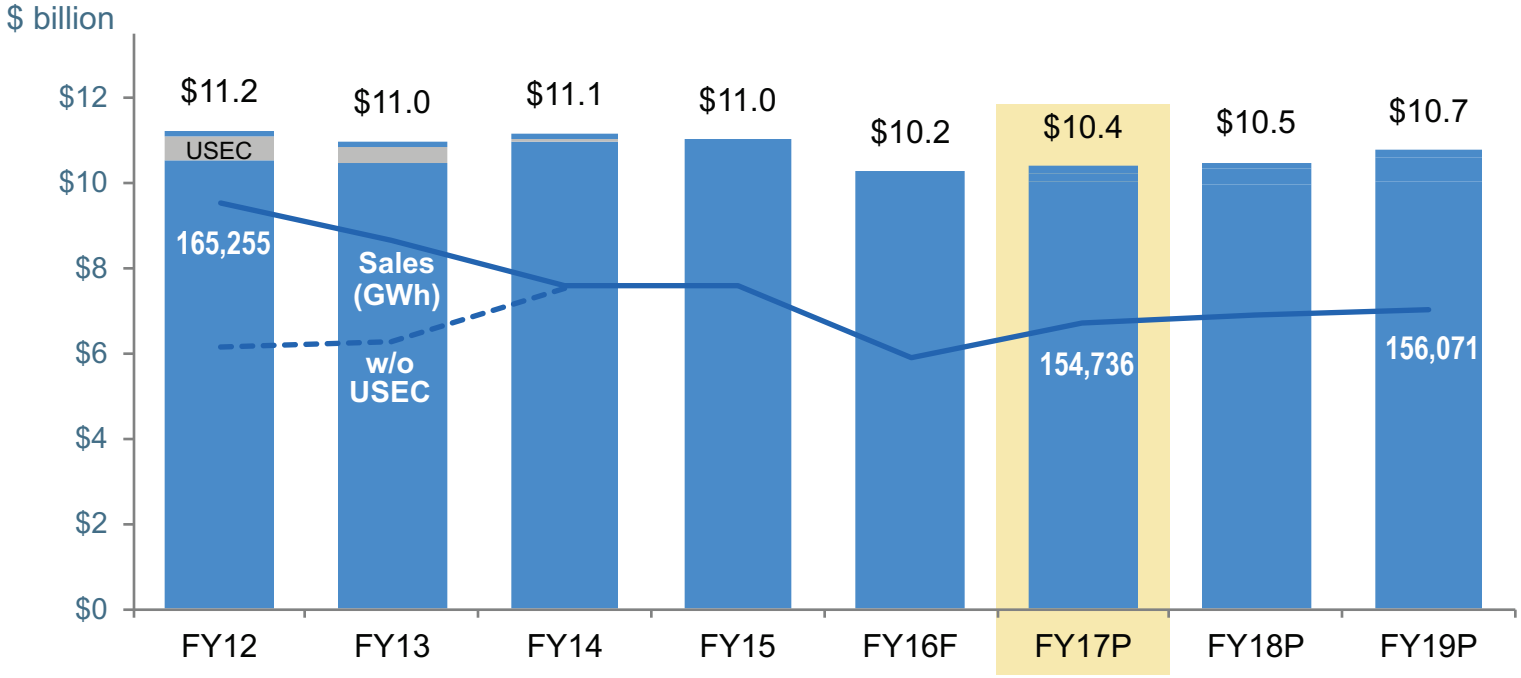
0.5% CAGR FY16-19
0.4% Net of EEDR

Energy
GWh

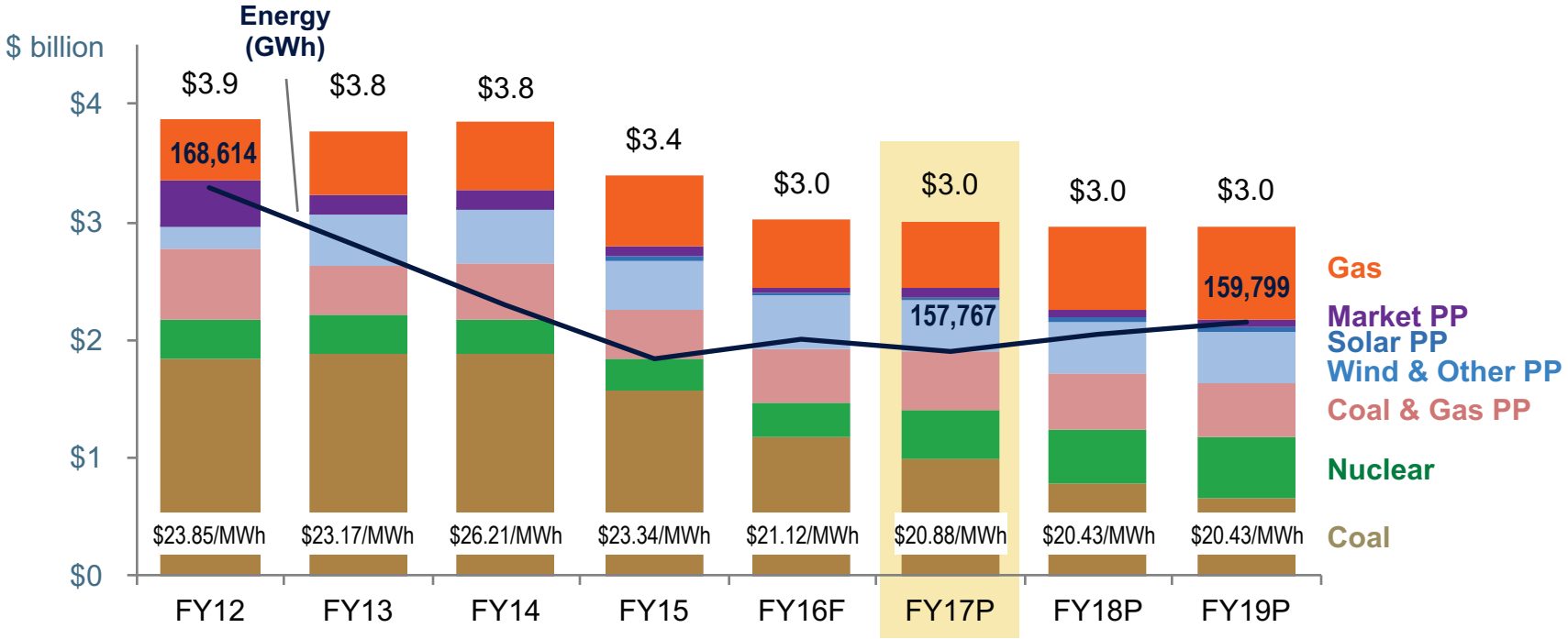


0.6% CAGR FY16-19
0.4% Net of EEDR

Revenue

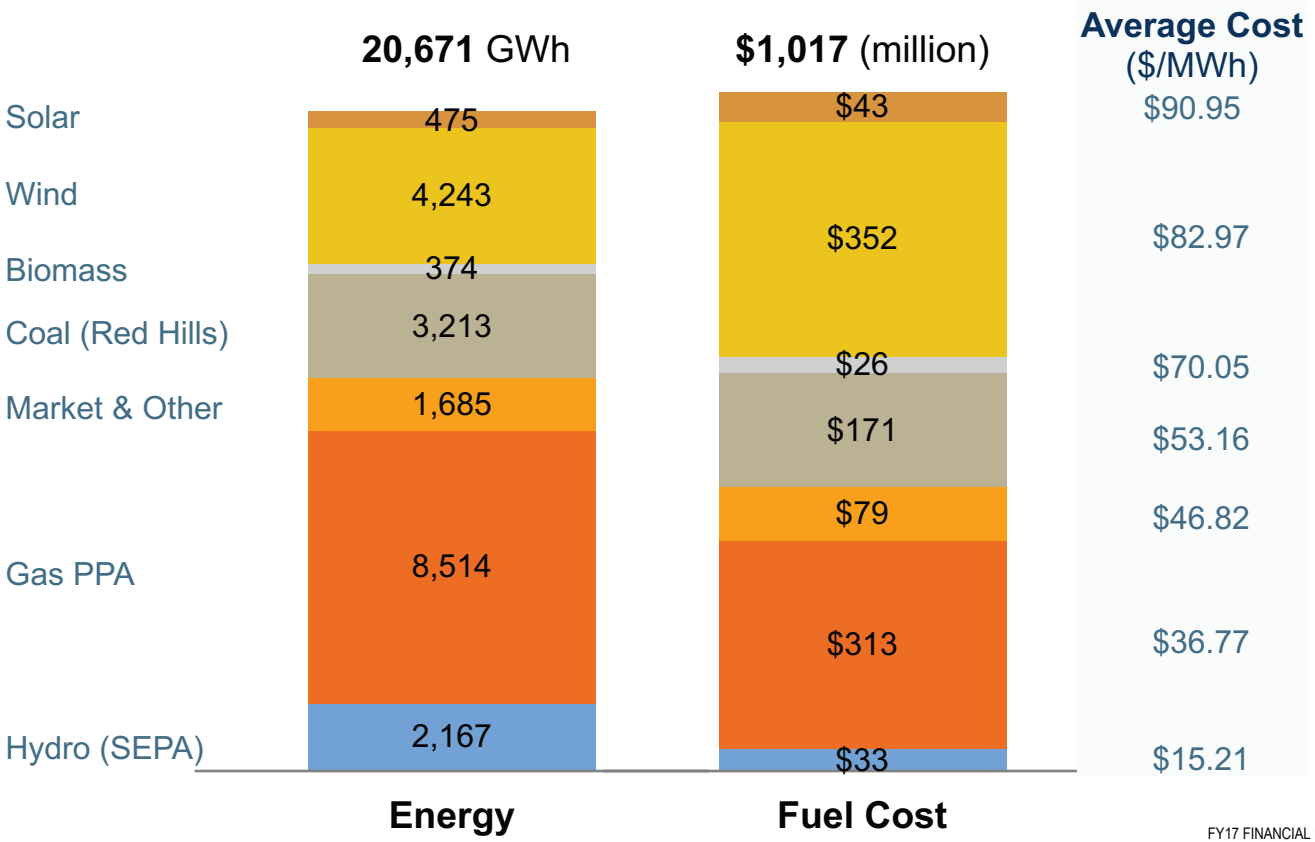

$ billion
$12
$10
$8
$6
$4
$2
$0
$11.2
$11.0
$11.1
$11.0
$10.2
$10.4
$10.5
$10.7
USEC
165,255
Sales (GWh)
w/o USEC
154,736
156,071
FY12
FY13
FY14
FY15
FY16F
FY17P
FY18P
FY19P

Fuel & Purchased Power

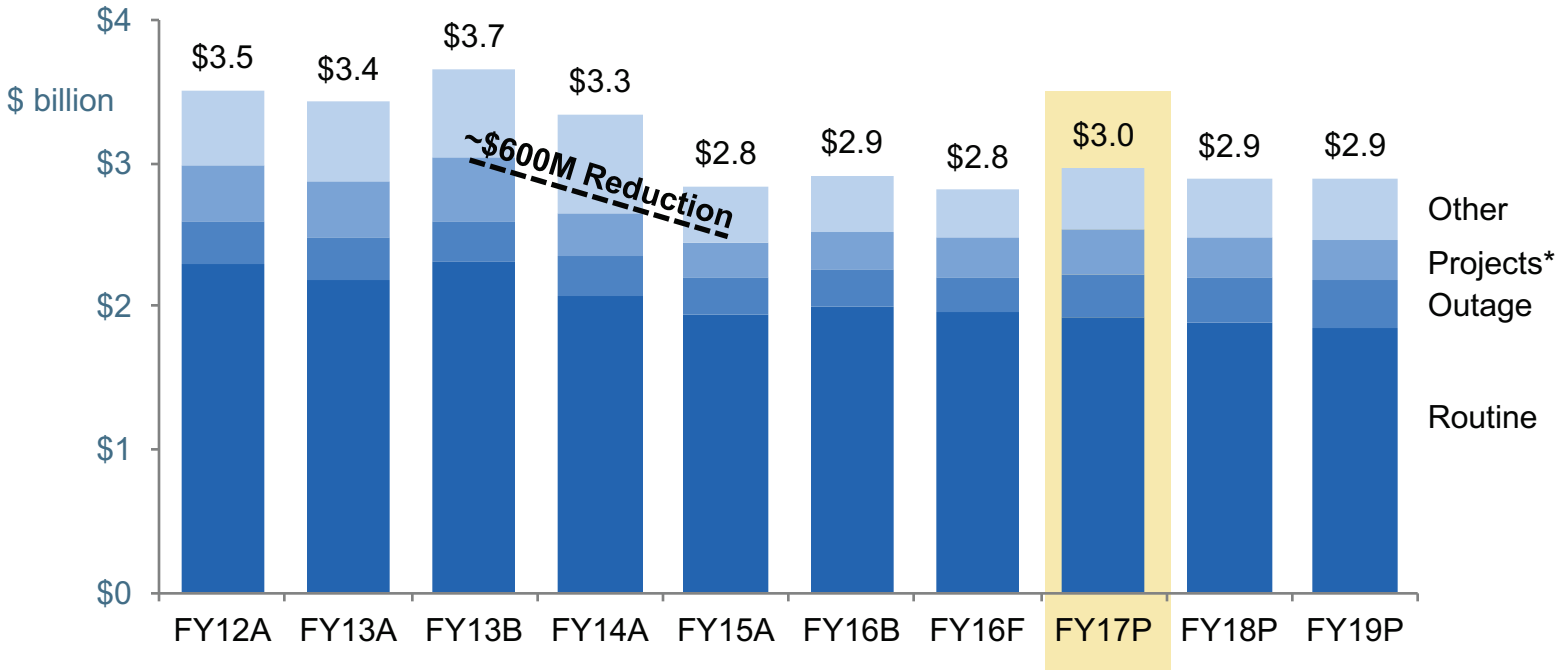


NOTE: Excludes adjustments to fuel expense related to FCA fuel revenue over/under recovery. Other includes SEPA and Biomass

Purchased Power Breakdown

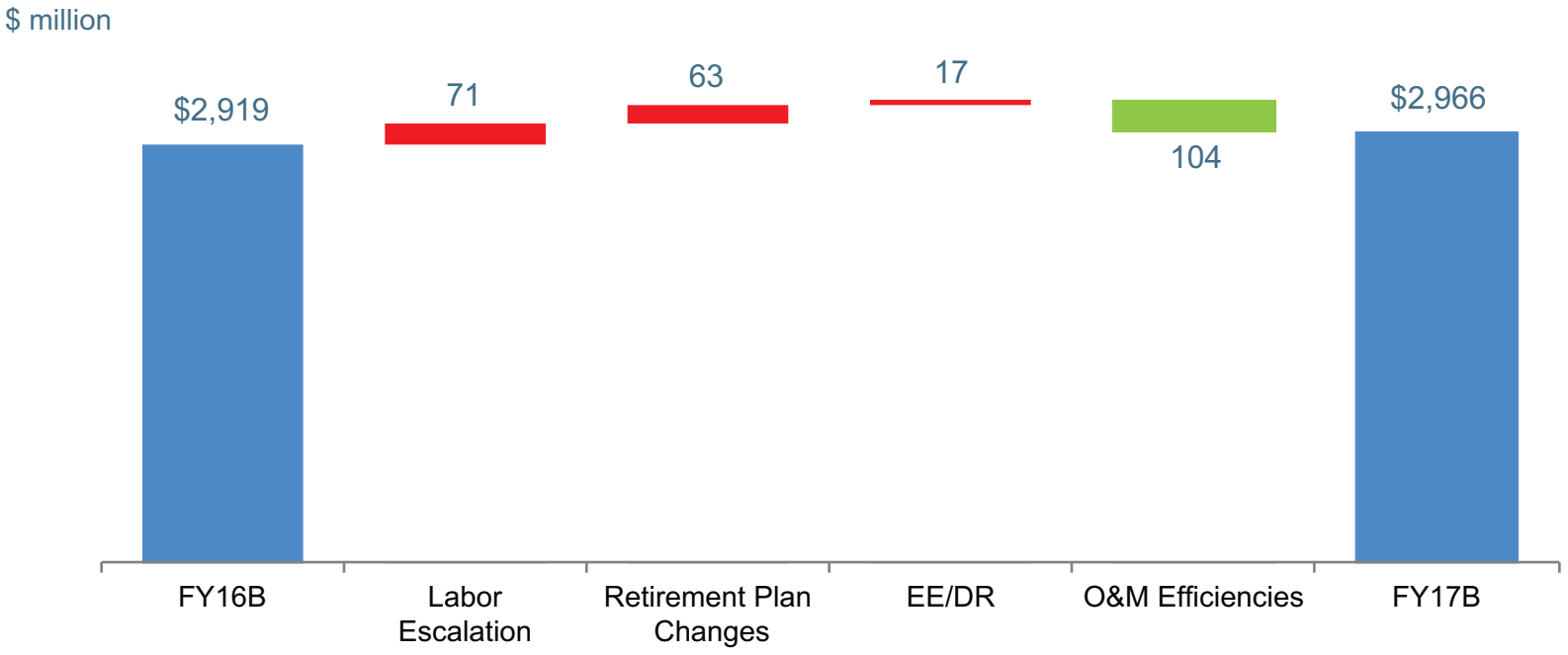


O&M Expense

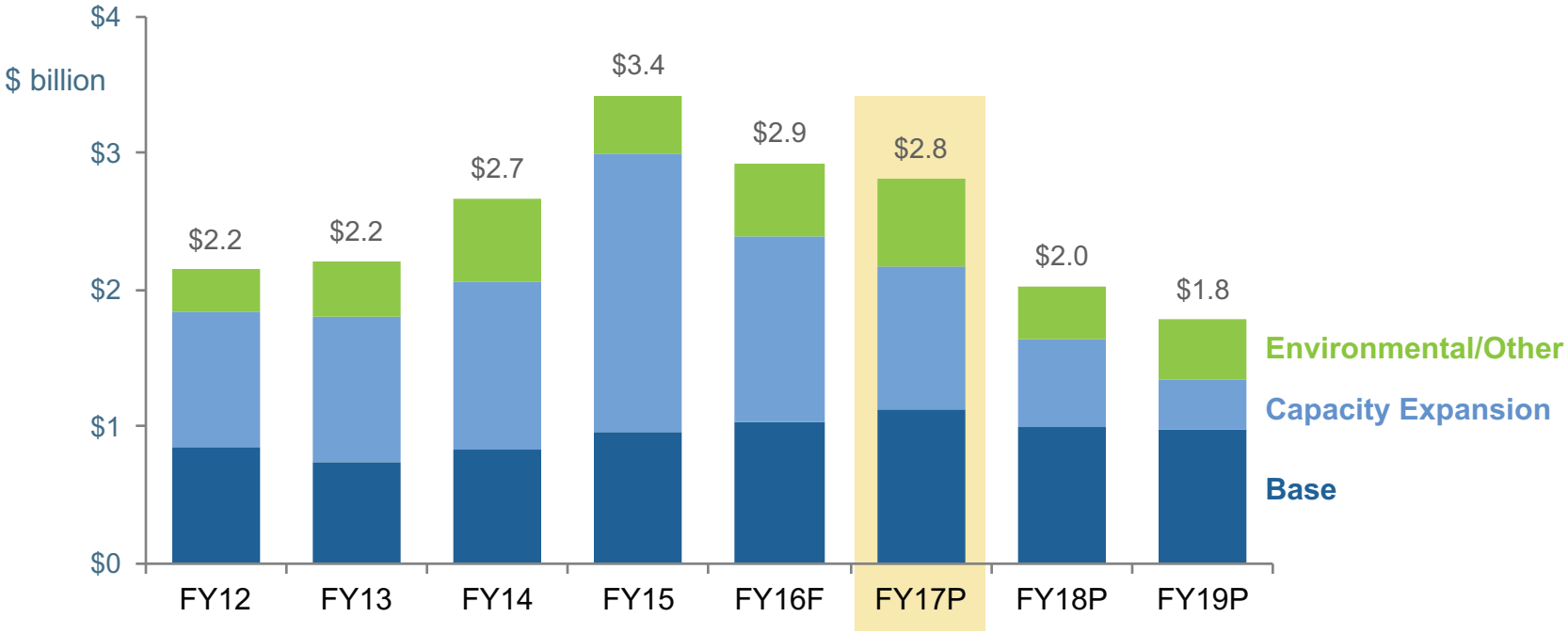


* Includes EEDR program costs and Corporate Insurance

Key Drivers: FY16 – FY17 O&M Expense

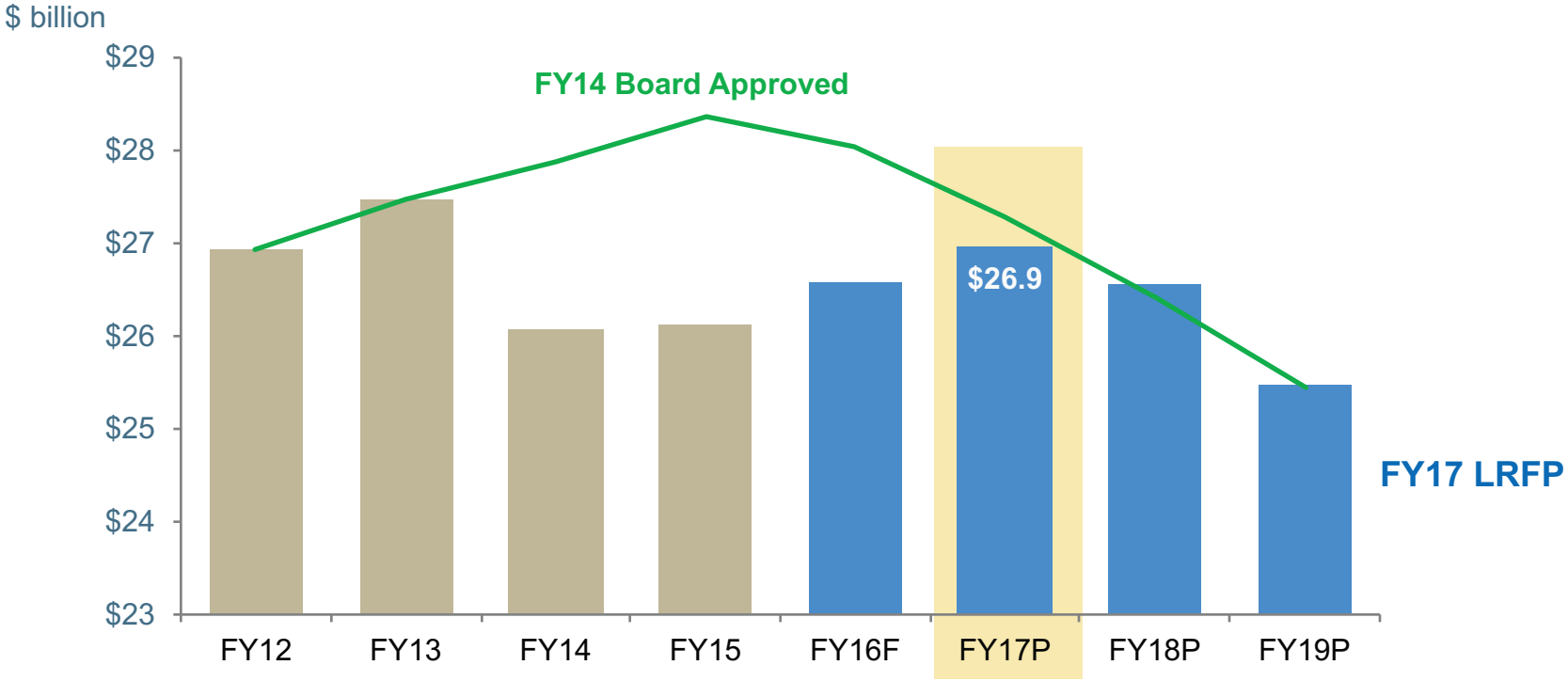


Capital Expenditures



*Capital Expenditures include AFUDC, Ash Remedy ARO, Kingston Ash Cleanup, and Bellefonte Regulatory Asset Spend

Total Financing Obligations



Rate Outlook

Summary Income Statement

$ million

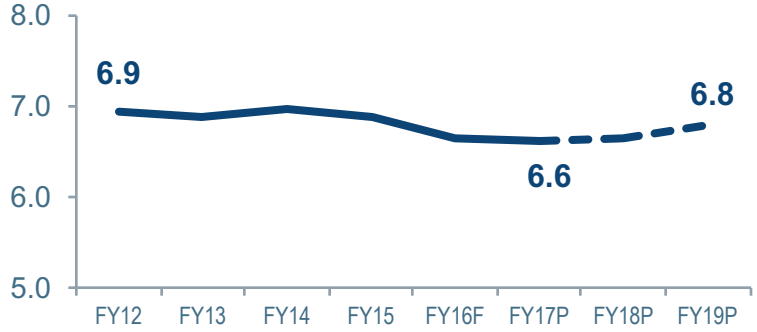
Operating Revenue	**$ 10,370**
Fuel & Purchased Power	3,008
Operations, Maintenance	2,966
Depreciation, Amortization, Accretion	1,874
Tax Equivalents	494
Operating Expenses	**8,342**
Other Income / (Expense)	35
Net Interest Expense	1,426
Net Income	**$ 637**

Revenue Requirements

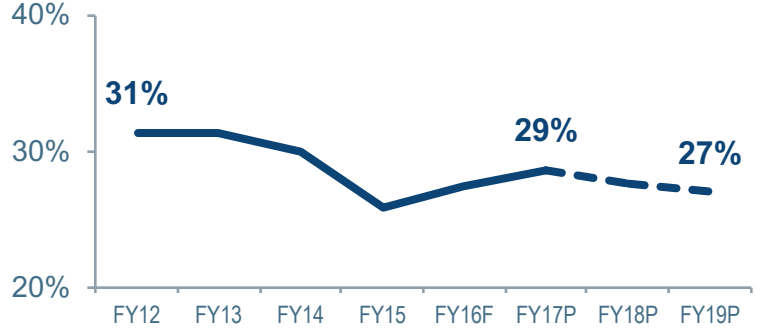
$ million		
	Fuel	$ 3,008
	O&M	2,966
	Base Capital	1,118
	Interest	1,426
	Tax Equivalents	494
	Debt Paydown	1,328
	Other	(120)
	Total TVA Revenue Requirements	**$ 10,220**
	Base Revenues	7,226
	Fuel Revenues	2,802
	Rate Action Revenues	192
	Total Electric Revenues	**$ 10,220**
	Surplus /(Shortfall)	–
	Strategic Capital	1,702
	Cash on Hand	–
	Debt Paydown	(1,328)
	Change in Total Financing Obligations	**$ 374**

Financial Track Record

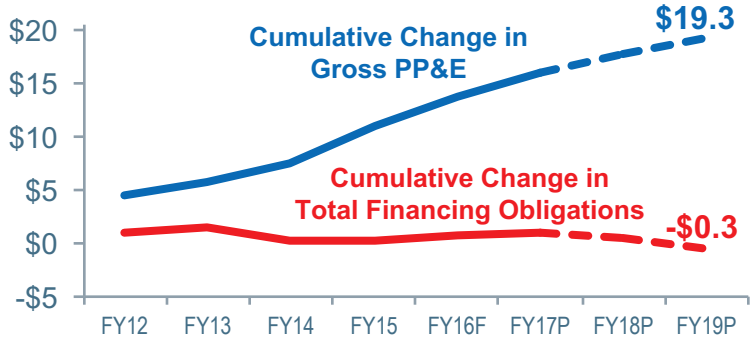
Maintaining Low Rates (¢/kWh)



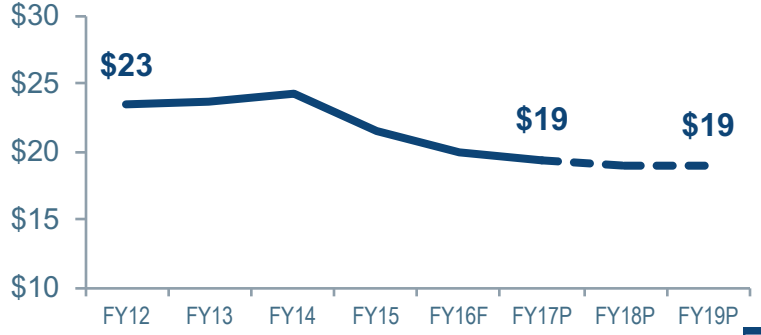
Aligning Non-Fuel O&M Cost (% of revenue)



Effectively Managing Debt ($ billions)



Balanced Portfolio – Fuel & PP Cost ($/MWh)



Summary

- Includes 1.5% effective retail rate increase
- Achieves debt reduction goal
- Provides $2.8 billion in new capital investment
- $104 million incremental productivity

Real Time Energy Rate

- The Real Time Energy Rate (RTE) was developed in 2003
- Currently applies only to greenfield (new) loads
- Extend to allow use of RTE for qualifying brownfield and expansion opportunities
- Review during next rate change

Recommendation

Approve the following:

- FY17 Budget
  - Includes Contracting Plan for Fuels and Purchased Power
- $3.0 billion of long-term bonds
- Projects over $50 million
- Land Condemnations
- Regulatory Accounting
- Rate Adjustment of $192 million effective October 1
  - Effective retail rate increase of 1.5%
- RTE rate modification

Nuclear Maintenance and Modifications

JOE GRIMES
Executive Vice President and
Chief Nuclear Officer

Consideration

Approval to authorize TVA to enter into a contract with Day & Zimmermann NPS, Inc. (DZNPS) for $950 million with a term of seven years and an option to extend an additional three years for nuclear maintenance and modifications services

Background

- TVA currently has an alliance contract with DZNPS to perform maintenance and modification work at TVA's nuclear facilities.
- This contract strategy allows TVA to support a diverse asset portfolio, improve operational reliability, and maintain low rates.
- TVA developed and executed a re-compete strategy that supports the strategic priorities.

Risks and Benefits Considered

Having evaluated the suppliers, DZNPS provided best value to TVA with respect to:

- Safety – solid, sustainable safety performance and program effectiveness
- Cost Effectiveness – use of least-cost planning principles
- Portfolio Diversity – experience to support all nuclear assets
- Flexibility – responsiveness to emergent work and changes to asset portfolio
- Quality – work executed per technical requirements

Recommendation

Approval to authorize TVA to enter into a contract with Day & Zimmermann NPS, Inc. (DZNPS) for $950 million with a term of seven years and an option to extend an additional three years for nuclear maintenance and modifications services

External Relations Committee

People and Performance Committee

Corporate Goals

JOHN THOMAS

Executive Vice President
and Chief Financial Officer

Fiscal Year 2017 Performance Goals

Approve scorecards for:

- **Annual Incentive Program (Winning Performance)**
  Designed to promote teamwork, create a high performance culture, and motivate and reward all eligible employees for achieving goals

- **Executive Long-Term Incentive Plan (ELTIP)**
  Designed to support achievement of long-term strategic goals

FY17 Winning Performance Design

- Corporate multiplier between 0 and 1.0
- Board defines key performance measures aligned to strategic imperatives
- Board / CEO qualitatively assess performance compared to target to determine final multiplier
- CEO establishes Business Unit scorecards
- Board continues to use judgment in all aspects of corporate performance

Winning Performance Scorecard Overview

Corporate Multiplier

Aligns to People, Financial, and Stewardship Strategic Imperatives Outlined by Board

Measure	Target
Safe Workplace	0
Financial Health	
Operating Cash Flow	Budget
Net Income	Budget
Total Financing Obligations	Budget
Jobs Created / Retained	67,000
Board Level Significant Events	0

Note: Corporate Measures include only a target; CEO / Board will assess performance above or below target

Executive Long-Term Incentive Plan (ELTIP)

FY19 ELTIP Cycle Scorecard:

Measures include:

- Wholesale Rate Excluding Fuel
- Load Not Served
- External Measures Index:
  - INPO Index
  - Media Tone
  - Stakeholder Survey
  - Customer Loyalty
  - Board Level Significant Events

2019 LTIP Scorecards

Measure	Weight	Threshold	Target	Stretch
Wholesale Rate Excluding Fuel (FY17 – FY19 avg.)	40%	5.00	4.91	4.81
Load Not Served (FY17 - FY19 avg.)	30%	4.8	4.0	3.5
External Measures (FY17 - FY19 avg.)	30%	80.6	88.4	96.1

Revision to 2017 and 2018 LTIP Scorecards

- The INPO index is part of the External Measures calculation
- INPO periodically changes the index calculation
- The targets for the the 2017 and 2018 External Measures are revised to reflect the new calculation

External Measures	Weight	Threshold	Target	Stretch
2017 (FY15 - FY17 avg.)	**30%**	**79.6**	**87.5**	**94.7**
2018 (FY16 - FY18 avg.)	**30%**	**80.0**	**88.0**	**95.5**

Recommendation

Winning Performance

- Approve Strategic Measures and targets in corporate multiplier

Executive Long-term Incentive Plan

- Approve LTIP 2019 Cycle scorecard and targets
- Reapprove 2017 and 2018 Cycle scorecards revised for new INPO measure

People and Performance Committee

Audit, Risk, and Regulation Committee

Board Meeting

August 25, 2016

Knoxville, Tennessee

TVA