



TVA BOARD  
**MEETING**

NOVEMBER 15, 2012



# PRESIDENT'S REPORT

PRESIDENT'S REPORT

# ENGINEER OF THE YEAR

# Our VISION

ONE OF THE NATION'S  
LEADING PROVIDERS  
OF LOW-COST  
AND CLEANER ENERGY  
BY 2020



# PATH TO THE VISION

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Progress on the path has been made but challenges remain

## **RESPONSIBILITY**

To our customers, employees, and the Valley

## **RATES**

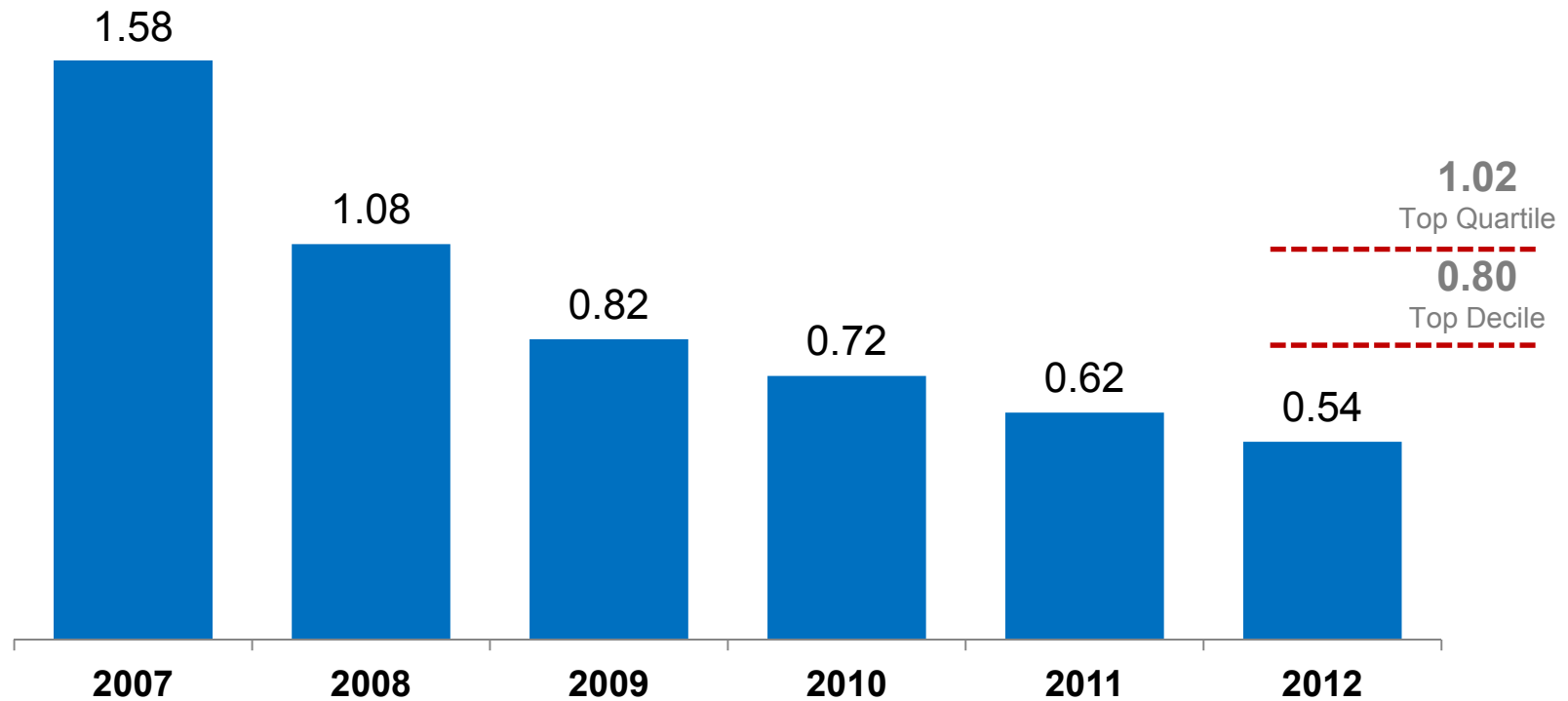
Meeting region's needs through low rates

## **RELIABILITY**

Balanced portfolio and well-operated system

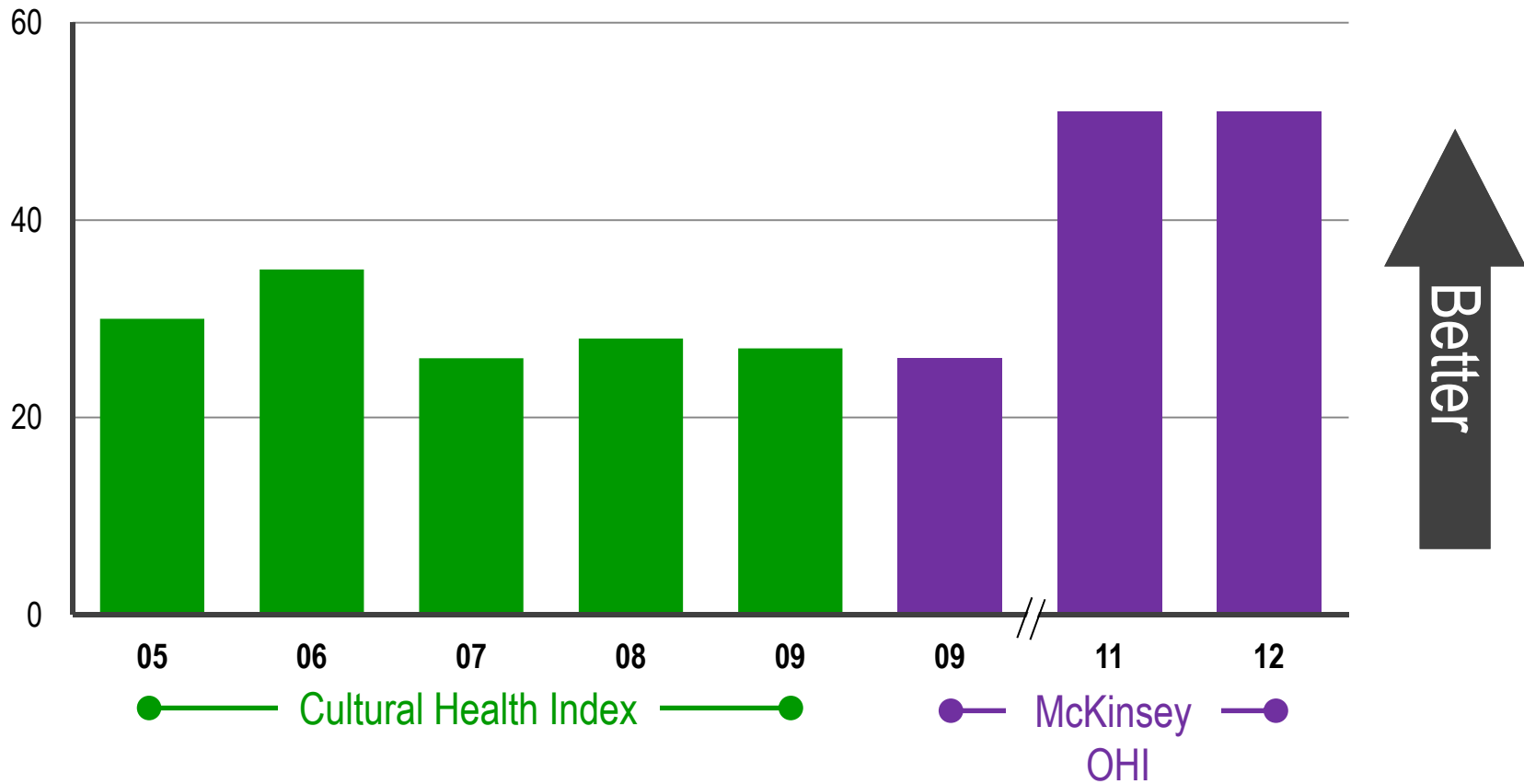
# RESPONSIBILITY: SAFETY

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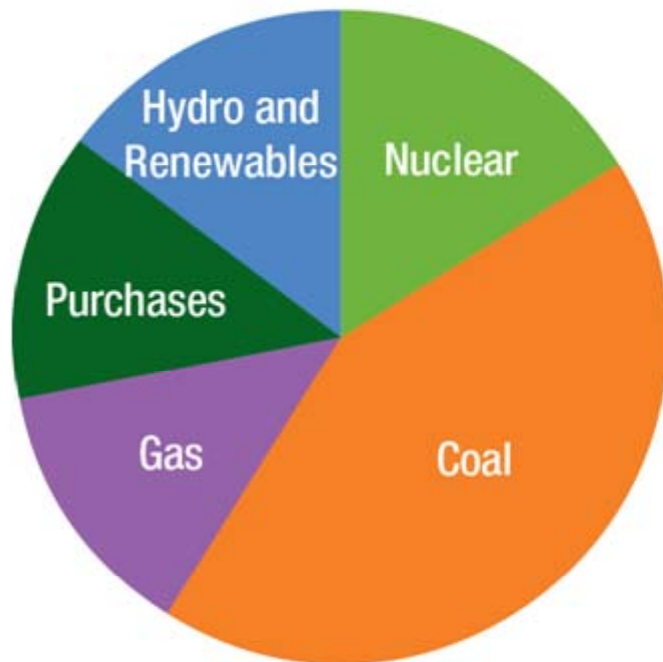
# RESPONSIBILITY: ORGANIZATIONAL HEALTH

Approximate  
Percentile

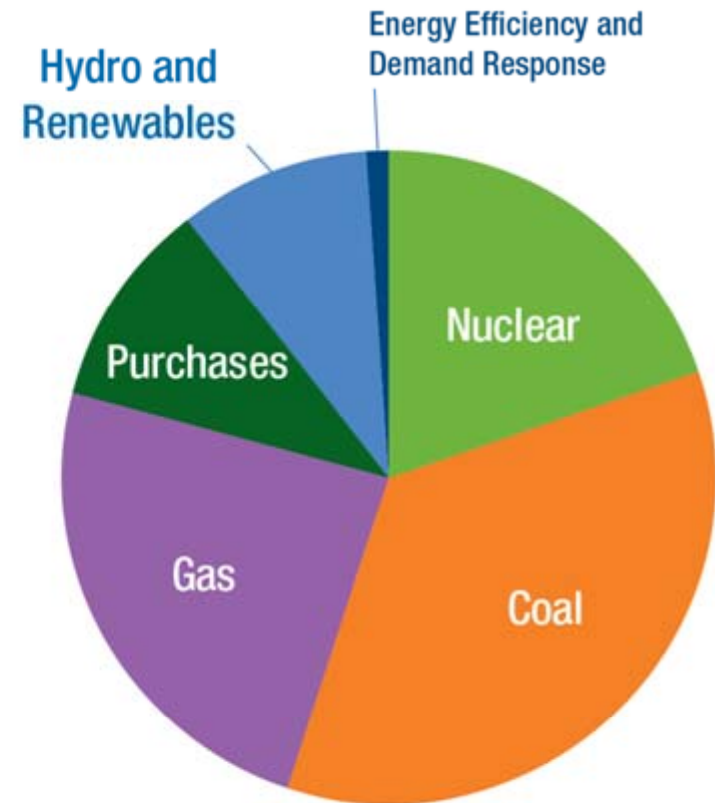


# A BALANCED PORTFOLIO LOWERS RATES AND PROTECTS RELIABILITY

2006



2012

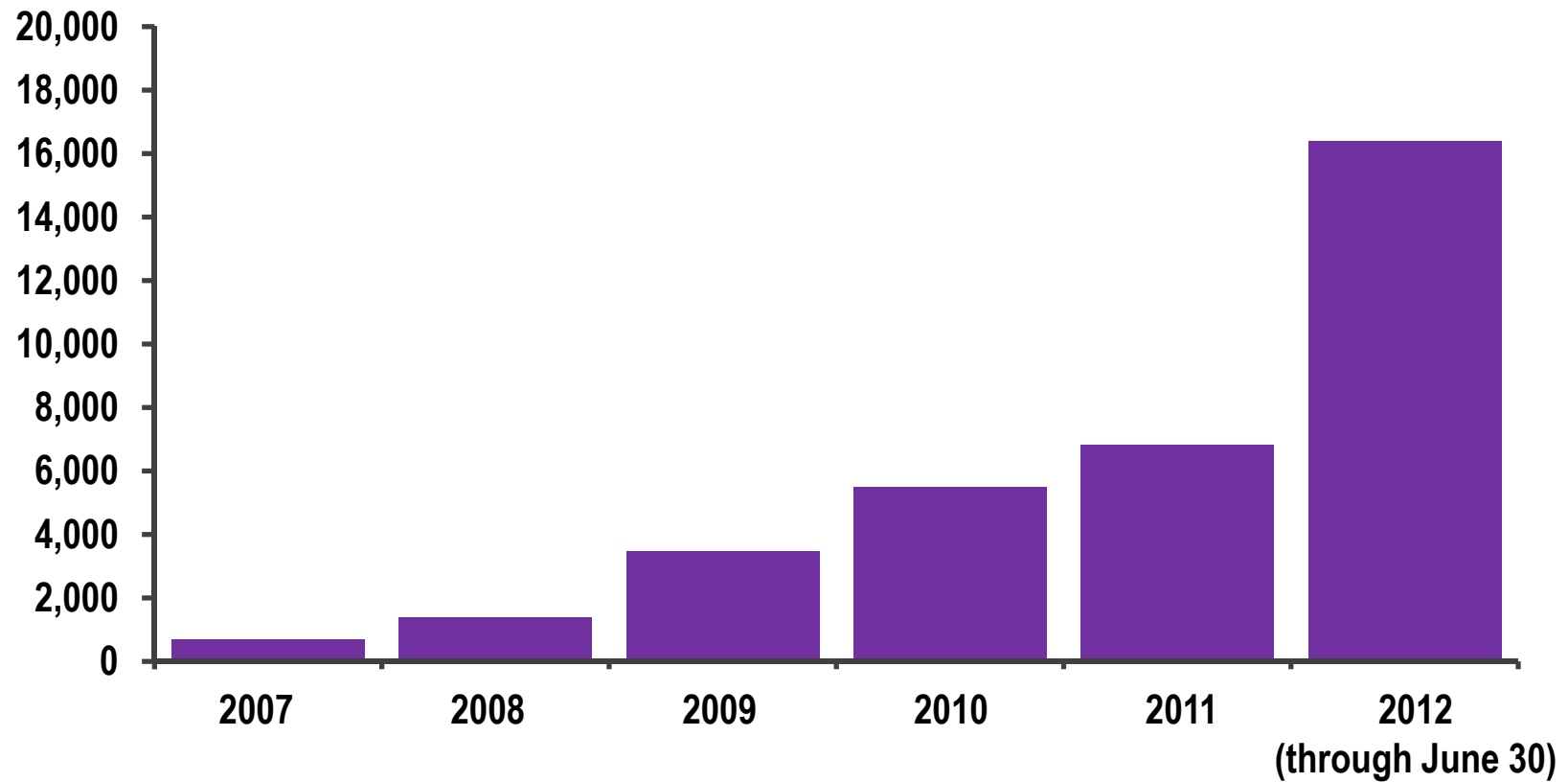




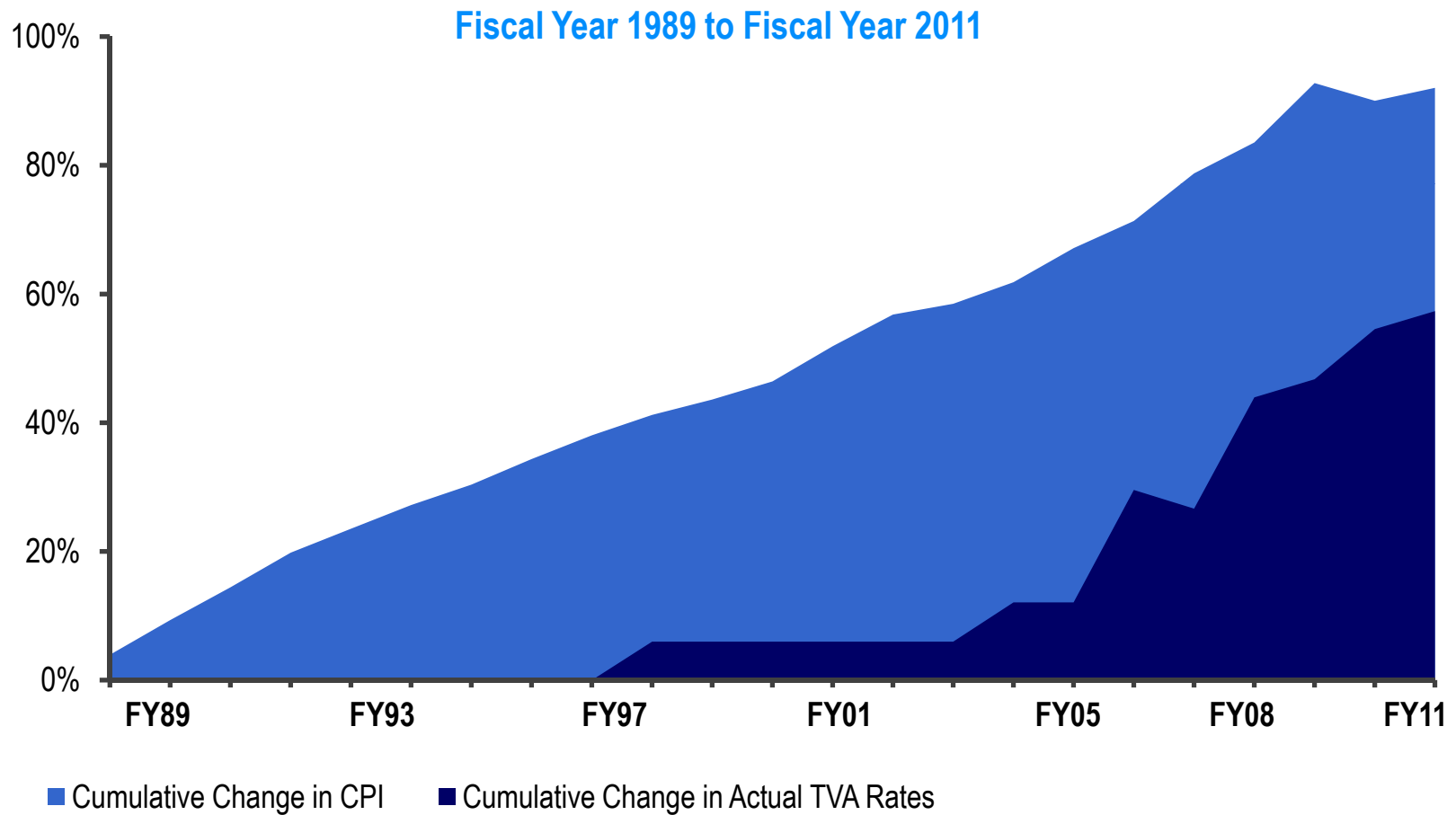
# RELIABILITY: GROWING GAS GENERATION

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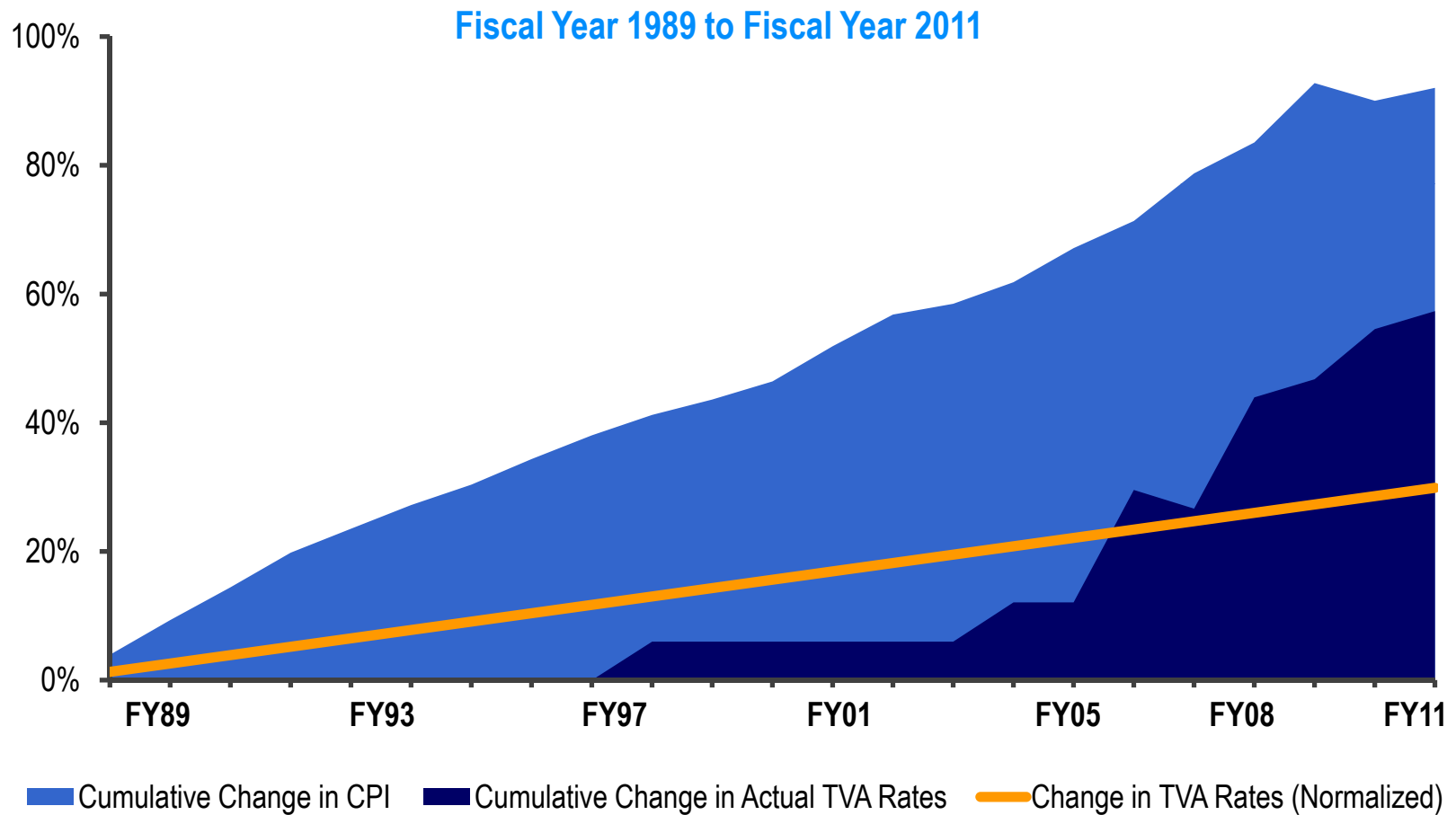
millions of kWh



# TVA RATES VS. CONSUMER PRICE INDEX

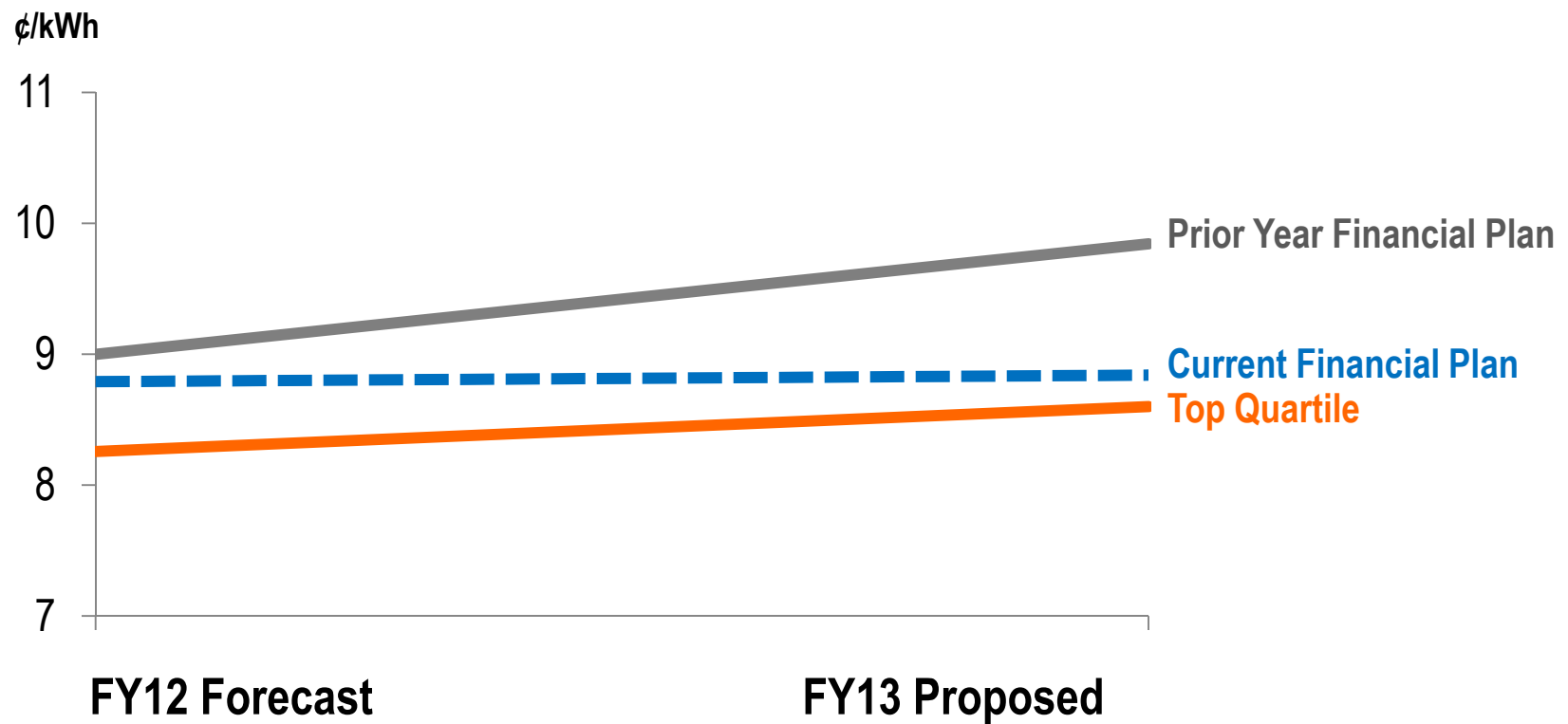


# TVA RATES VS. CONSUMER PRICE INDEX

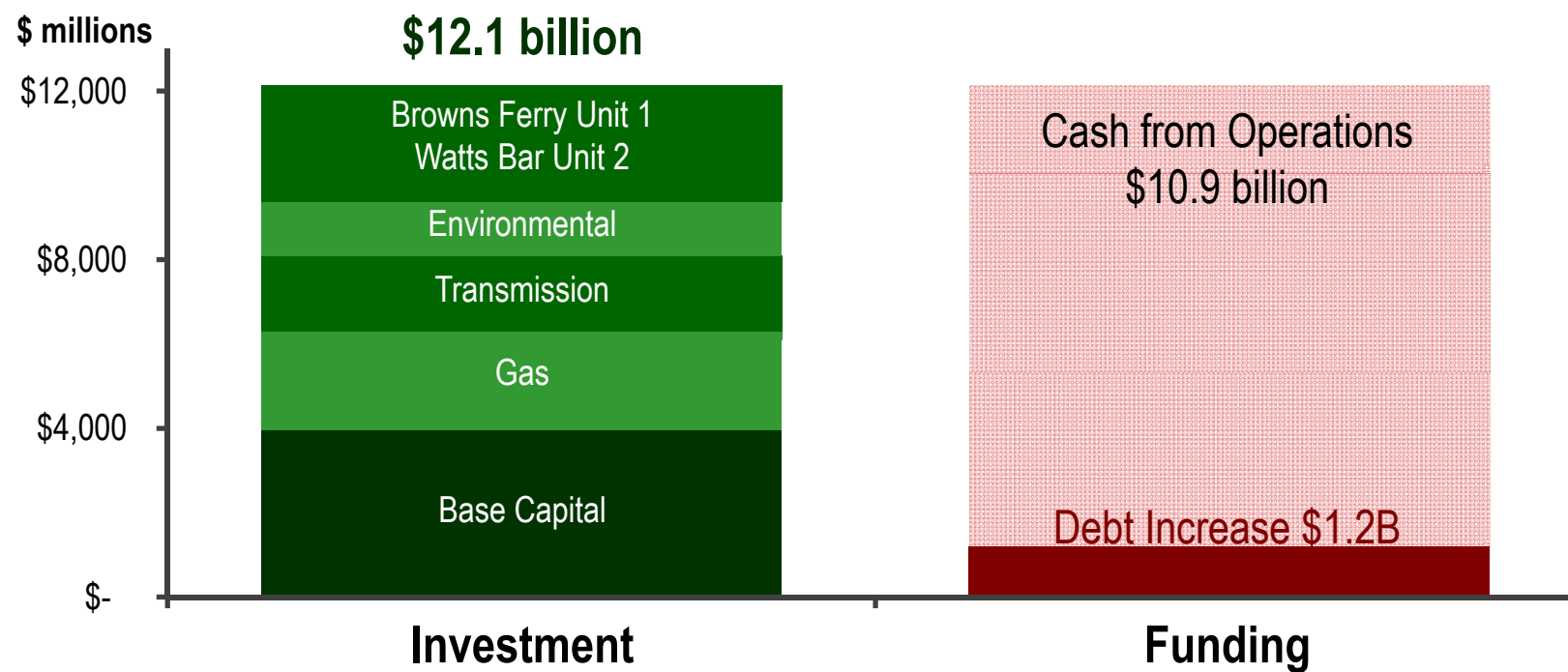


# TVA RETAIL RATE

Current trajectory achieves top quartile by FY16



## CHANGE IN VALUE FY07 TO FY12



TVA added \$12 billion in investment for an incremental increase in debt of only \$1.2 billion

# SUMMARY

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- Safety continues to improve and has reached top decile
- Organizational health has reached median performance, still needs improvement
- Portfolio has become more balanced
- Closing gap to top quartile performance in rates



# PRESIDENT'S REPORT

NOVEMBER 15, 2012



# FINANCE, RATES, AND PORTFOLIO

COMMITTEE

NOVEMBER 15, 2012



FINANCE, RATES, AND PORTFOLIO COMMITTEE

# FY12 FINANCIAL HIGHLIGHTS

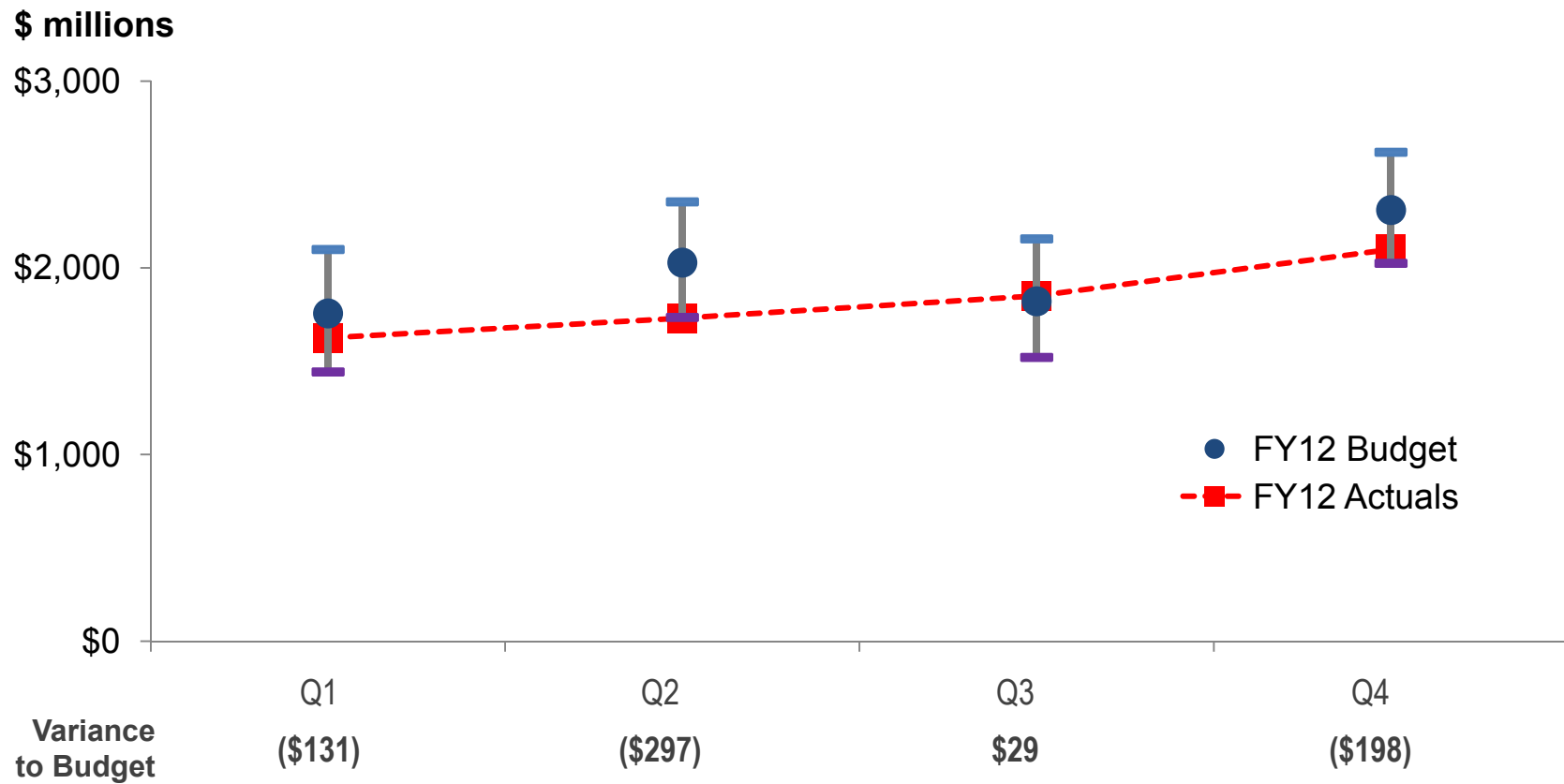
# FISCAL YEAR 2012 SUMMARY

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- Mildest winter temperatures in 60 years drove lower sales
- Lower fuel costs from reduced sales and low gas prices
- Lower Cash Flow from reduced sales - offset by management actions
- Capacity Expansion slowed to match current conditions

# BASE REVENUES

Mild weather in Q2 and Q4 drove revenues to low end of range



# SUMMARY INCOME STATEMENT

Base Revenue impacted by weather, economy, customer usage

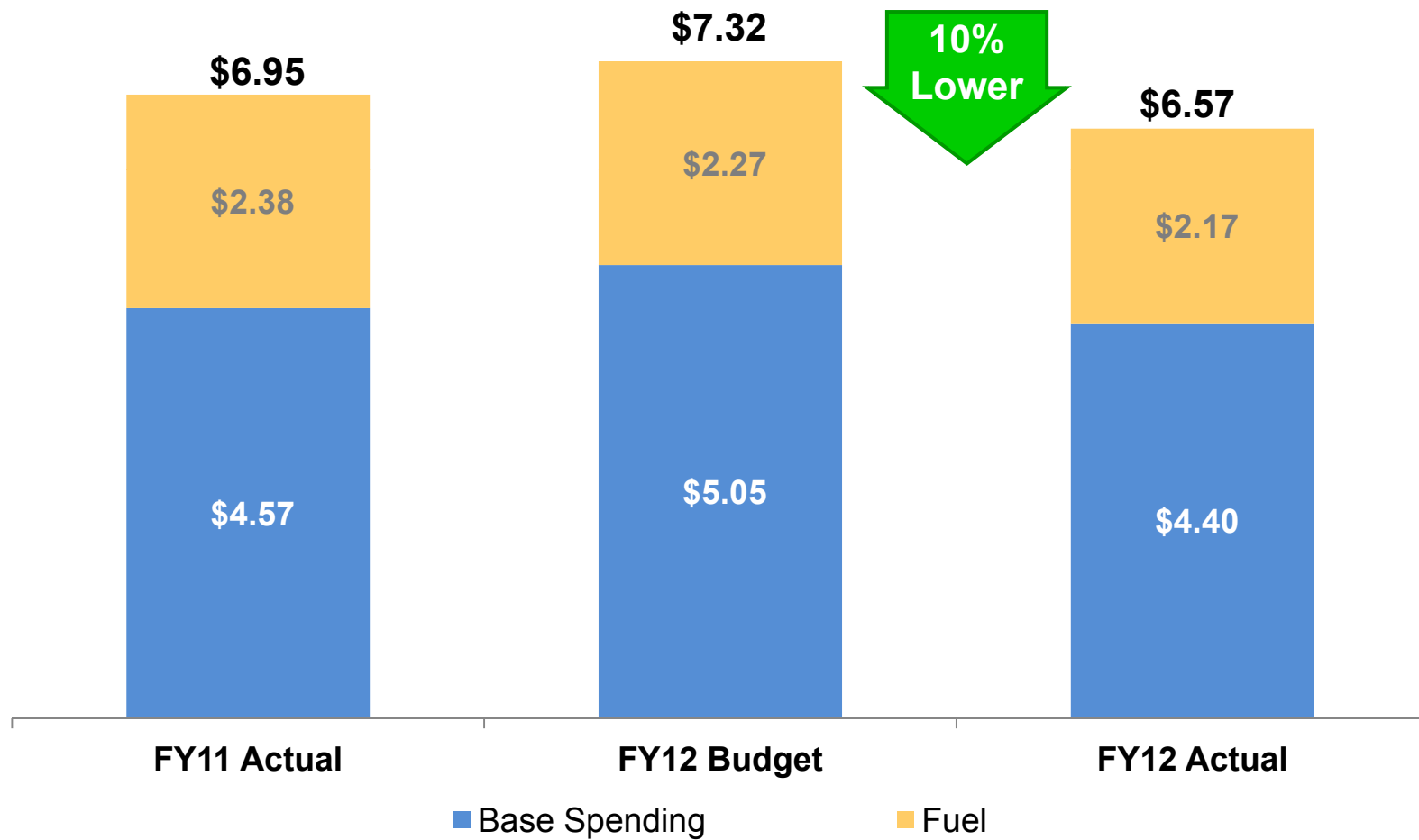
(\$ millions)	<u>Prior Year</u>	<u>Budget</u>	<u>Actual</u>	<u>Var to Budget</u>
<b>Operating Revenue</b>	\$ 11,841	\$ 12,049	\$ 11,220	\$ (829)
Base Revenue	7,615	7,916	7,318	(598)
Fuel Revenue	4,108	4,013	3,768	(245)
Other Revenue	118	120	134	14
<b>Operating Expenses</b>	<b>10,404</b>	<b>10,374</b>	<b>9,920</b>	<b>(454)</b>
Fuel and Purchased Power	4,353	4,129	3,869	(260)
Operations & Maintenance	3,013	3,335	2,961	(374)
Other O&M (Pension, OWCP)	604	420	549	129
Depreciation / Amortization	1,772	1,850	1,919	69
Tax Equivalents, Other	<u>662</u>	<u>640</u>	<u>622</u>	<u>(18)</u>
<b>Operating Income</b>	\$ 1,437	\$ 1,675	\$ 1,300	\$ (375)
<b>Other Income</b> (investments, external business)	30	16	33	17
<b>Interest Expense</b>	<u>1,305</u>	<u>1,377</u>	<u>1,273</u>	<u>(104)</u>
<b>Net Income</b>	\$ <u>162</u>	\$ <u>314</u>	\$ <u>60</u>	\$ <u>(254)</u>

# SUMMARY CASH FLOW STATEMENT

Weather impacts offset by less spending on O&M and capital

(\$ millions)	<u>Prior Year</u>	<u>Budget</u>	<u>Actual</u>	<u>Var to Budget</u>
Beginning Cash and Short-term Investments	\$ 328	\$ 500	\$ 507	\$ 7
Cash Flow from Operating Activities	2,437	2,415	2,574	159
Cash Flow used for Investing Activities	(3,142)	(3,815)	(2,513)	1,302
Cash Flow from Financing Activities	<u>884</u>	<u>1,107</u>	<u>300</u>	<u>(807)</u>
Net Change in Cash and Short-term Investments	<u>179</u>	<u>(293)</u>	<u>361</u>	<u>654</u>
Ending Cash and Short-term Investments	\$ 507	\$ 207	\$ 868	\$ 661
FY Debt and Financing Obligations	<u>26,659</u>	<u>27,385</u>	<u>26,912</u>	<u>(473)</u>
FY Debt and Financing Net of Cash	<u>\$ 26,152</u>	<u>\$ 27,178</u>	<u>\$ 26,044</u>	<u>\$(1,134)</u>
<i>Change from Prior Year</i>				\$ (108)

# LOWER POWER COSTS



# SUMMARY

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## Hard Spots

- Mild weather significantly impacted demand in winter
- Continued slower economic recovery
- Managing spending pressure for asset material condition and regulatory requirements

## Highlights

- Lower commodity prices (natural gas and purchased power)
- Management actions conserved cash
- Managed Capital Expansion to changing conditions
- Wholesale effective rate  $\approx 10\%$  lower than plan

FINANCE, RATES, AND PORTFOLIO COMMITTEE

# SECTION 13 TAX EQUIVALENT PAYMENTS

NOVEMBER 15, 2012



# FOR BOARD CONSIDERATION

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- Approve the final tax equivalent payment allocations to the states and counties for Fiscal Year 2012
- Approve the estimated tax equivalent payment allocations to the states and counties for Fiscal Year 2013

# BACKGROUND

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- TVA Act requires five percent of TVA's gross proceeds from power sales to be redistributed as tax equivalent payments
- The payments are determined by the following criteria:
  - 50% from the states' book value of power properties compared to TVA total power properties
  - 50% from the states' power sales compared to TVA total power sales

# TAX EQUIVALENT PAYMENTS

(in millions)

<b>State</b>	<b>Final FY 2008</b>	<b>Final FY 2009</b>	<b>Final FY 2010</b>	<b>Final FY 2011</b>	<b>Final FY 2012</b>	<b>Estimated FY 2013</b>
Alabama	\$ 112	\$ 120	\$ 125	\$ 116	\$ 123	\$ 108
Georgia	7	8	9	9	9	8
Illinois	<1	1	1	<1	1	1
Kentucky	43	46	49	47	47	46
Mississippi	26	32	35	33	41	38
North Carolina	3	3	3	3	3	3
Tennessee	265	295	327	321	354	331
Virginia	<1	<1	1	1	1	1
<b>Total</b>	<b>\$ 457</b>	<b>\$ 505</b>	<b>\$ 550</b>	<b>\$ 530</b>	<b>\$ 579</b>	<b>\$ 536</b>

# RECOMMENDATION

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- Approve the final tax equivalent payment allocations to the states and counties for Fiscal Year 2012
- Approve the estimated tax equivalent payment allocations to the states and counties for Fiscal Year 2013

FINANCE, RATES, AND PORTFOLIO COMMITTEE

# GE WATER CONTRACT

NOVEMBER 15, 2012

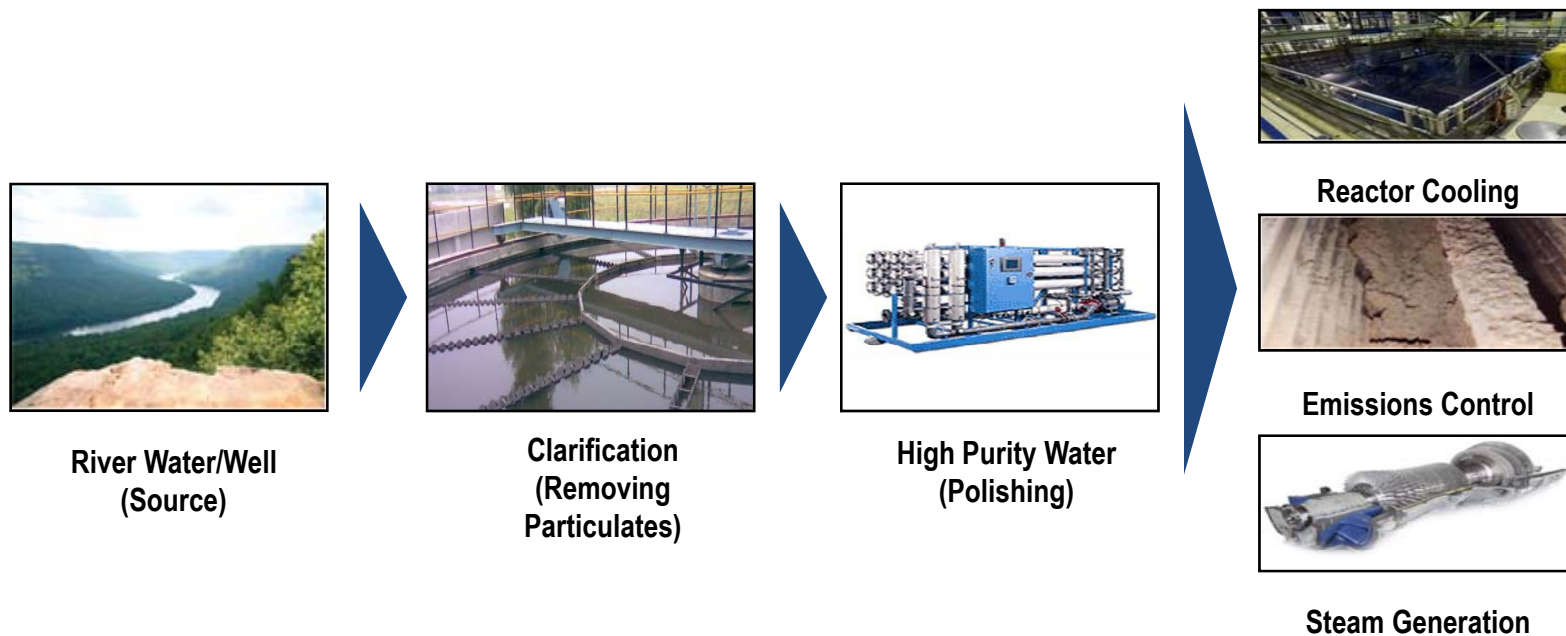
# FOR BOARD CONSIDERATION

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Approve five-year, \$160 million contract with GE Consortium for water treatment services

# WATER TREATMENT SERVICES PROVIDED BY GE WATER

TVA outsources water treatment services to lower total cost of ownership, and to remain current with water treatment technology



# BACKGROUND

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- TVA entered into a contract in 2009 after a request for proposals
- Due to increased number of projects including Watts Bar Unit 2 water plant and upgrades at Browns Ferry, expenditures have increased
- Contract allows TVA to leverage GE Consortium's research and development to reduce TVA's environmental impact



# RECOMMENDATION

---

Approve five-year, \$160 million contract with GE Consortium for water treatment services

FINANCE, RATES, AND PORTFOLIO COMMITTEE

# INDUSTRIAL CUSTOMER REQUEST

NOVEMBER 15, 2012

FINANCE, RATES, AND PORTFOLIO COMMITTEE

# OPTIONAL SUPPLEMENTAL RESIDENTIAL RATES

NOVEMBER 15, 2012

# FOR BOARD CONSIDERATION

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- Approve availability, at the local power distributors' option, of supplemental residential rate schedules

# BACKGROUND

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- Schedules would apply only to separately-metered, non-commercial buildings on residential property that do not qualify for standard residential rates:
  - Garages, workshops, well houses, etc.
  - Majority of use must be for domestic purposes
- Availability of proposed schedule would provide distributors with ability to address issues related to these appurtenance accounts

# RECOMMENDATION

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- Approve availability, at the local power distributors' option, of supplemental residential rate schedules

FINANCE, RATES, AND PORTFOLIO COMMITTEE

# RACCOON MOUNTAIN UPDATE

NOVEMBER 15, 2012

# BACKGROUND OF EUROPEAN FAILURE

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Plant: Rodundwerk II

Plant Owner:

Illwerke AG, Vorarlberg, Austria

Generator Failure and Fire:

July 2009

Apparent Cause of

Initial Failure:

Lightning on transmission line



Generator Fire – July 2009



# BACKGROUND OF EUROPEAN FAILURE

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## Key Facts

- Unit tripped at full load
- 4 seconds after trip, the rotor pole broke from the rotor rim
- 16 seconds after trip, fire (or explosion) started
- Fire lasted 6-1/2 hours
- Damage to the unit was a catastrophic loss at a cost of \$40M and one-year lead time for equipment



Rotor Removal – December 2009

# TVA RESPONSE

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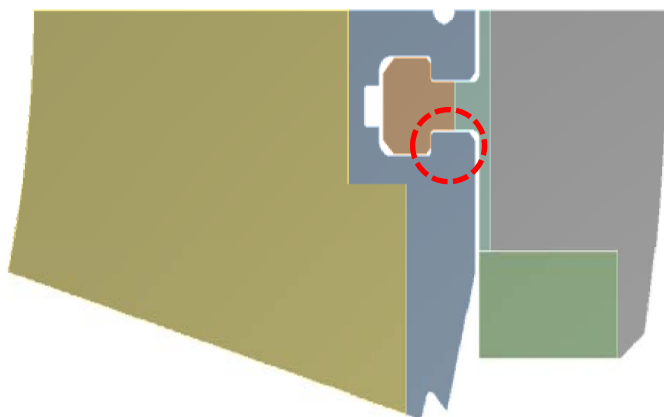
## **Immediate**

- Voith Hydro informed TVA of the potential for a similar failure at Raccoon Mountain
- TVA disassembled the rotor of Unit 3 in November of 2010 and performed inspections, no indications were found; TVA committed to perform the remaining inspections during routine outages

## **Subsequent**

- Unit 2 was inspected in early 2012, numerous cracks were found on the generator rim and poles
- Remaining uninspected units were removed from service and inspected. Cracks were also found in Units 1, 3 and 4

# RACCOON MOUNTAIN INSPECTION FINDINGS



Plan view of rotor pole to rotor rim hammer head connection showing area of concern

## Rim

Unit	Indications	Number of Slots with Indications ( of 48)	Deepest Grind
1	42	31	15mm
2	158	46	22mm
3	553	47	14.7mm
4	385	48	20mm

## Poles

Indications	Number of Poles with Indications (of 24)	Number of Dead Poles
92	24	11
74	23	11
36	15	5
98	22	6

# RACCOON MOUNTAIN AVOIDED LOSS

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- Injury or loss of life to personnel
- Catastrophic failure of unit
- Severe damage to peripheral equipment
- Damage to water barrier with possible flooding
- Due to the location of the Raccoon Mountain rotors (inside the mountain), the damage would likely have been more severe than the Austrian unit, which is located outside the mountain.
- Replacement costs for one unit would range from \$50 million to \$150 million
- Total repair/replacement cost for all four units at Raccoon Mountain approximately \$55 million



# PEOPLE AND PERFORMANCE

COMMITTEE

NOVEMBER 15, 2012

PEOPLE AND PERFORMANCE COMMITTEE

# PERFORMANCE REVIEW

NOVEMBER 15, 2012

# SUMMARY

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## **One year goals**

- Top decile Safety (13% reduction vs. FY11)
- Continued reduction in reportable environmental events
- Nuclear Availability reached Top Quartile
- Best year ever for Fossil Equivalent Forced Outage Rate
- Net Cash Flow favorable \$1.1 billion / Rates 10% better than plan
- Operational O&M \$245 million favorable to plan

## **Three year goals**

- 13th year of 99.999% reliable power
- Improvement in TVA rates
- Organizational Health at median

# SUMMARY

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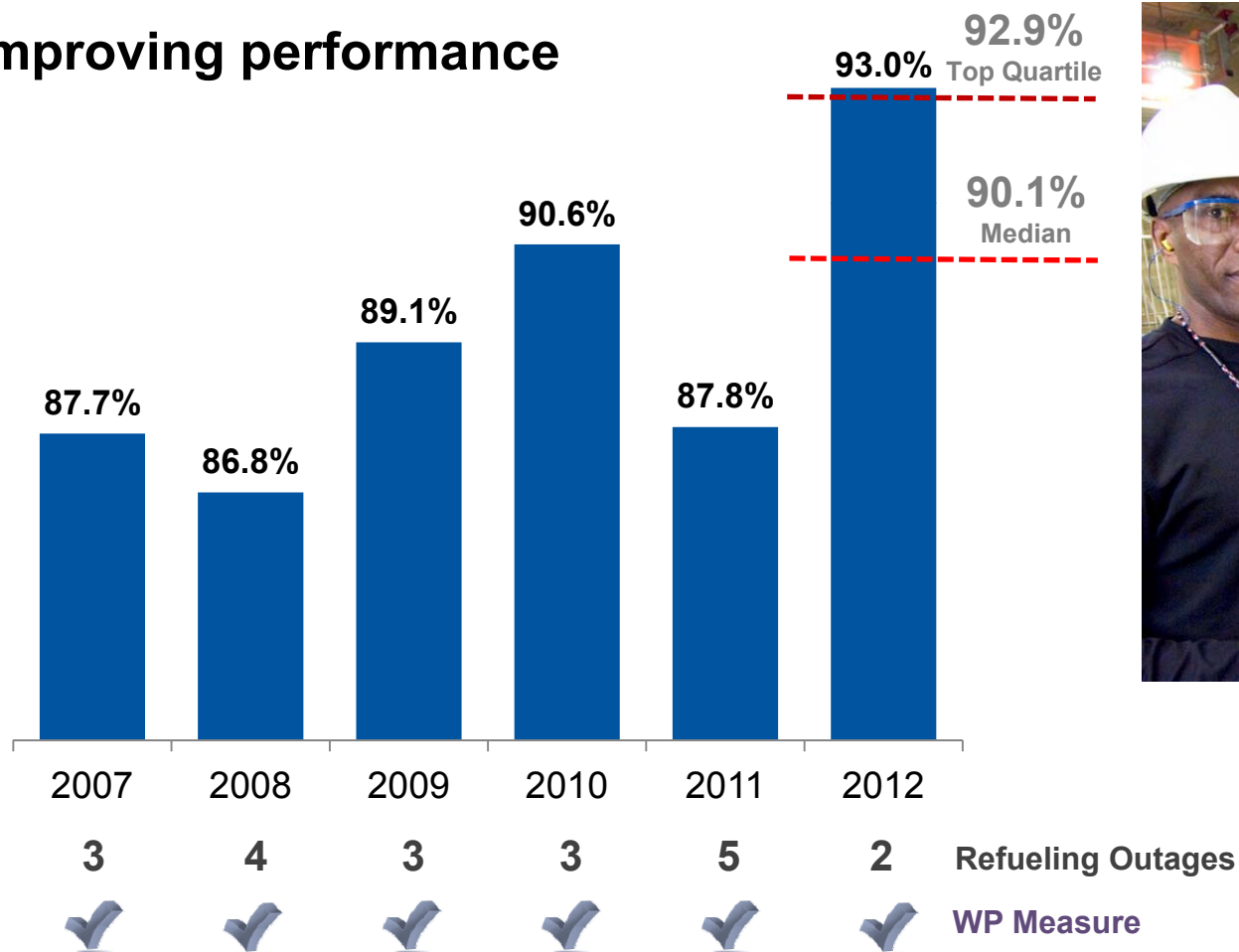
## **Performance Challenges**

- Cultural Health remained flat from FY11 to FY12
- Project issues
- Nuclear regulatory findings
- Nuclear outage performance



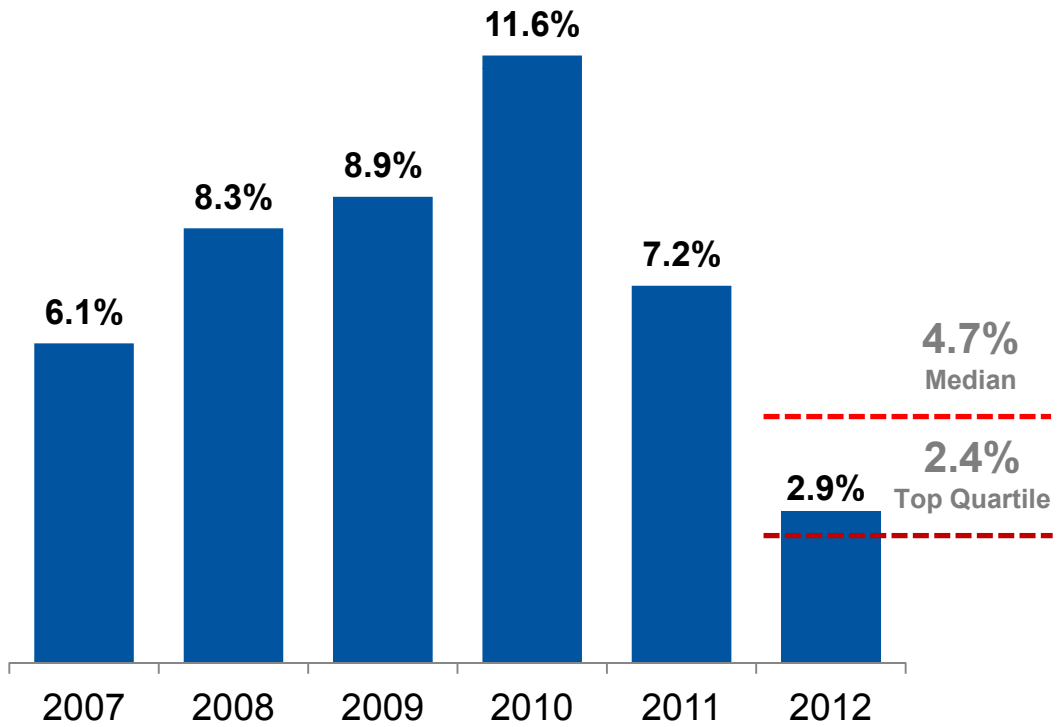
# NUCLEAR PLANT AVAILABILITY

## Improving performance



# CRITICAL FOSSIL SEASONAL EQUIVALENT FORCED OUTAGE

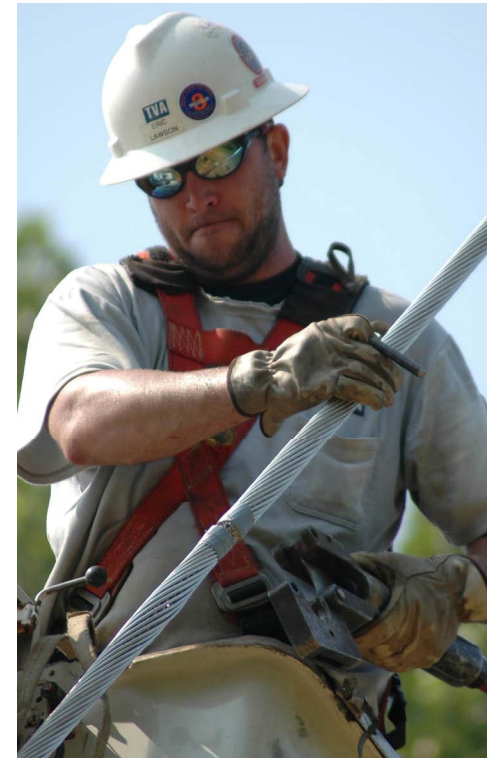
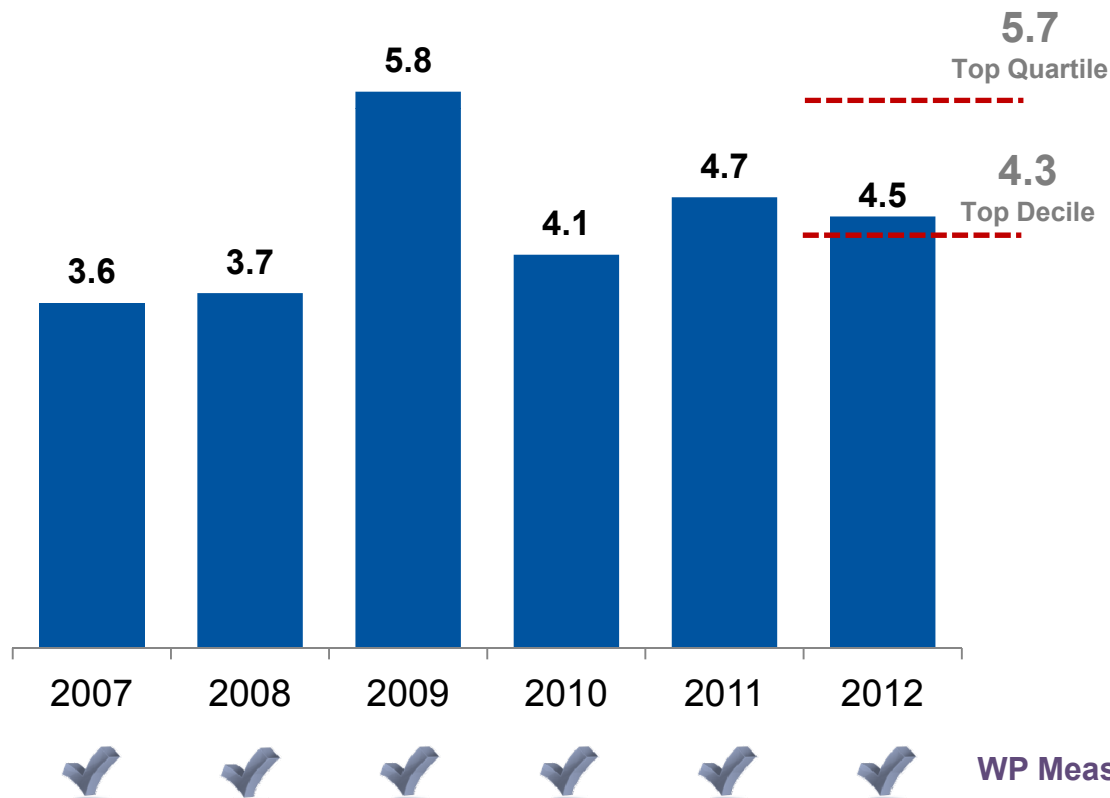
One of our best years on record



WP Measure

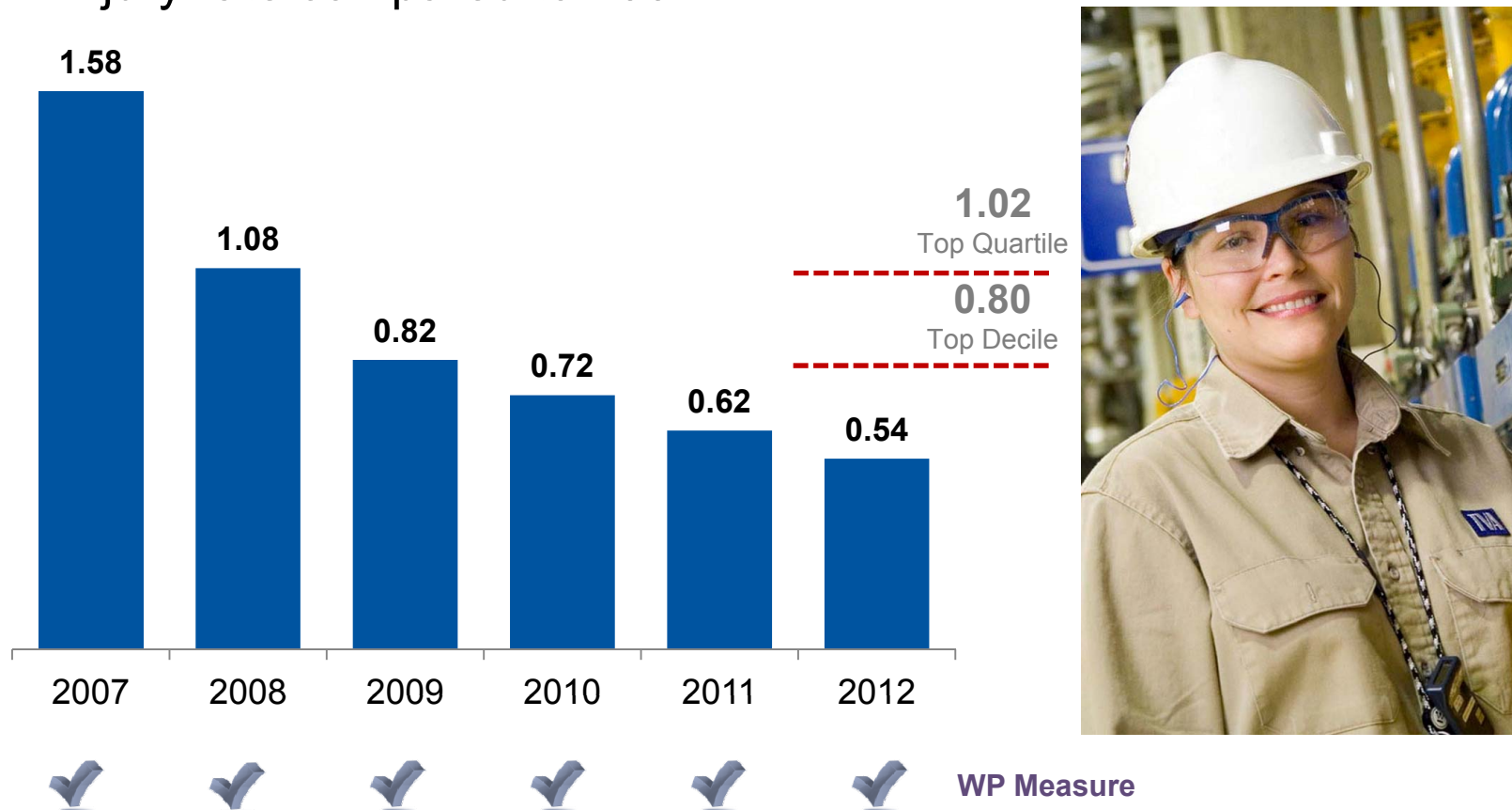
# 13TH CONSECUTIVE YEAR OF 99.999% RELIABILITY

Load Not Served (System Minutes)



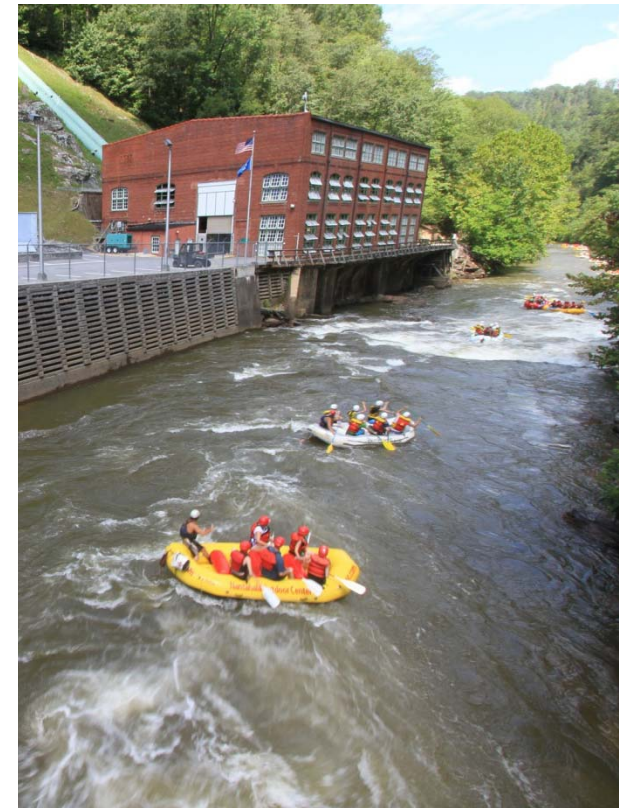
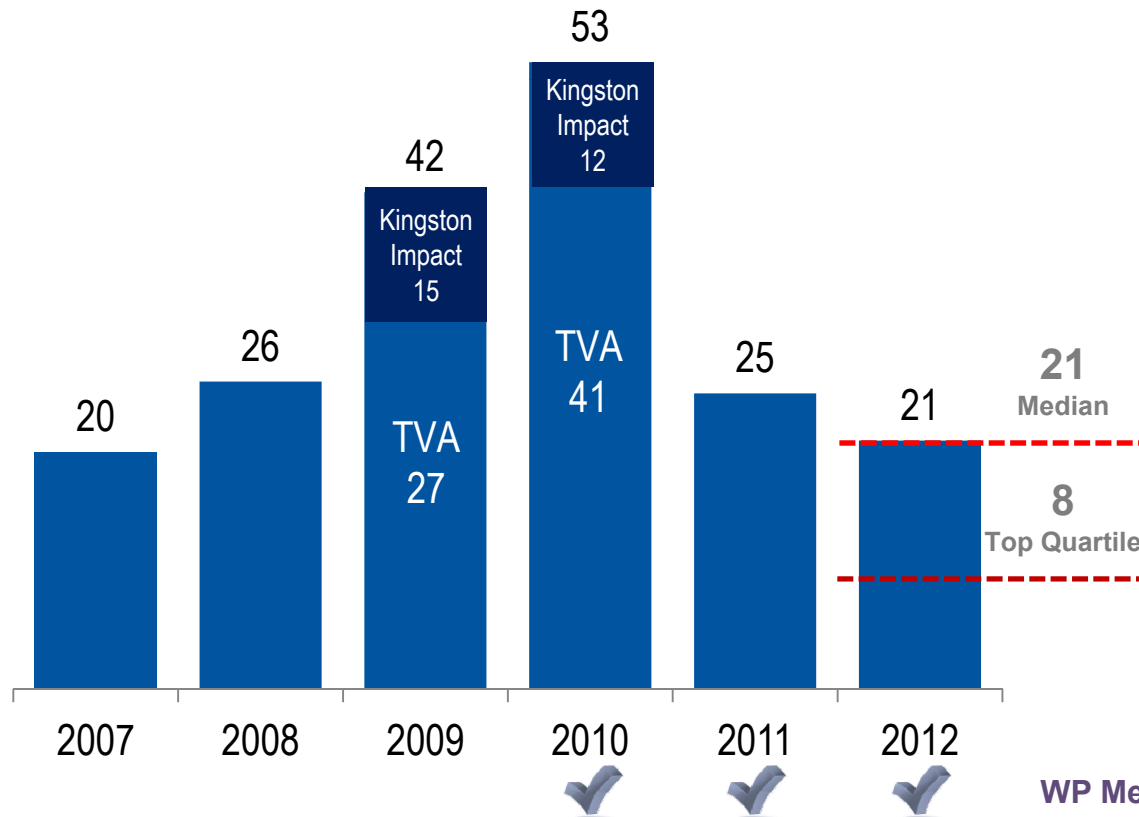
# SAFETY (RECORDABLE INJURY RATE)

One of the best years for safety, with 66% decrease in injury rate compared to 2007



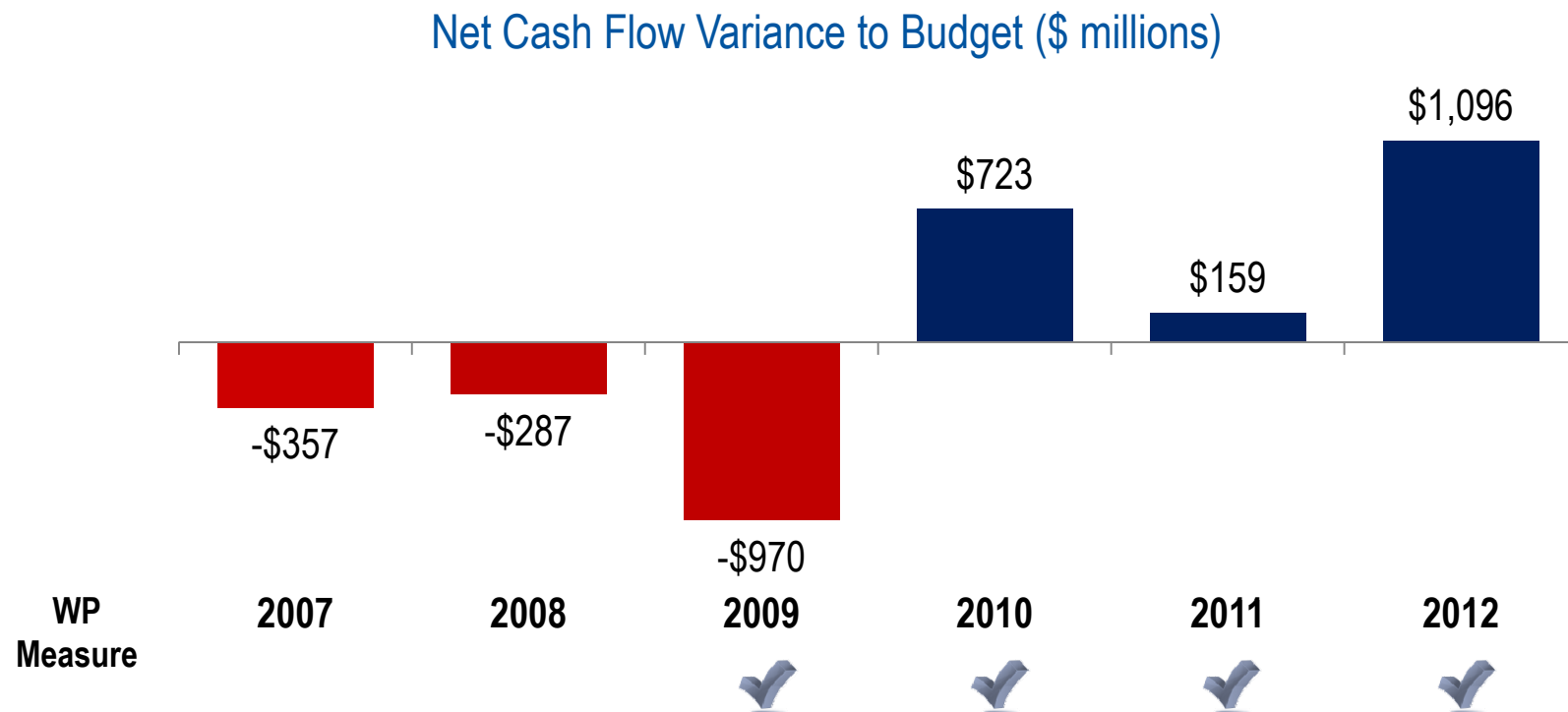
# REPORTABLE ENVIRONMENTAL EVENTS

TVA has continued to see a decrease in REEs

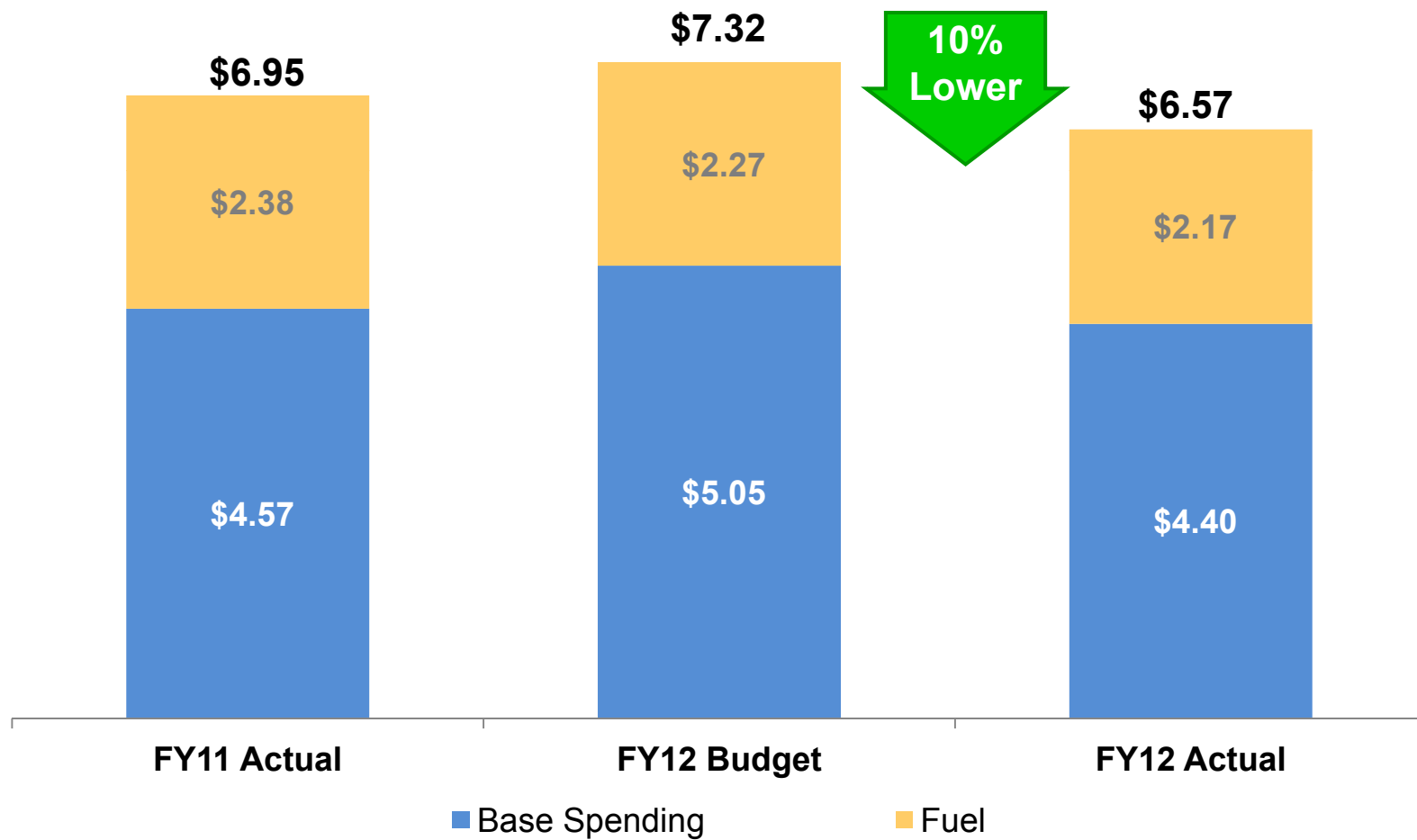


# NET CASH FLOW

Management action offset unfavorable weather and working capital

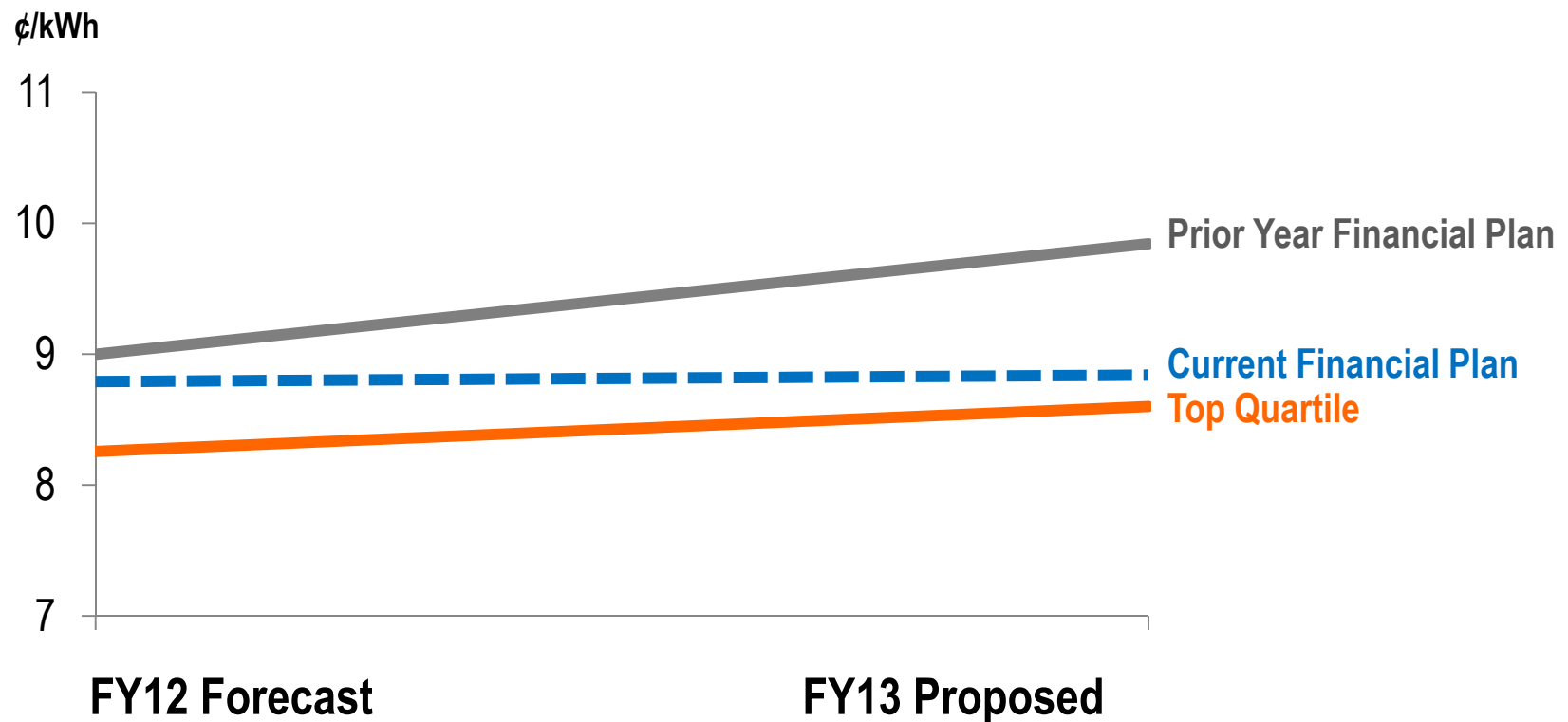


# LOWER POWER COSTS



# TVA RETAIL RATE

Current trajectory achieves top quartile by FY16





# FY12 PERFORMANCE

## AT OR ABOVE EXPECTATIONS

Net Cash Flow

Nuclear Generation

Critical Fossil Seasonal

EFOR

Generation Spend

Energy Delivery Spend

Energy Delivery Safety

Generation Plant Safety (7)

Nuclear Plant Safety (2)

Bellefonte Milestones

Nuclear Construction Safety

Load Not Served

Construction CPI (2)

Construction SPI (2)

Nuclear Plant Outages(SQN)

Generation REEs

Nuclear Spend

Generation Plant Safety (4)

Nuclear Plant Safety (2)

Generation Construction  
Safety

*USEC contract extension  
7<sup>th</sup> year Top 10 Econ Dev*

## BELOW EXPECTATIONS

Organizational Health survey

Generation Plant Safety (3)

Nuclear Plant Outages (WBN/BFN/NPG)

*Nuclear construction (WBN 2)*

*Nuclear Regulatory Findings*

*Nuclear Equipment - BFN tower*

# PERFORMANCE SUMMARY

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- Non-officer employees receive an incentive payout as reflected in their performance scorecards for achieving annual goals
- Senior leadership adjusted to a lower incentive payout from their scorecards due to performance with:
  - Organizational health
  - Major capital projects
  - Nuclear regulatory issues

# FUTURE GOALS

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- Future performance goals being coordinated with incoming CEO
- Submitted to the board soon



# PEOPLE AND PERFORMANCE

COMMITTEE

NOVEMBER 15, 2012



# AUDIT, RISK, AND REGULATION

COMMITTEE

NOVEMBER 15, 2012



# NUCLEAR OVERSIGHT

COMMITTEE

NOVEMBER 15, 2012



# EXTERNAL RELATIONS

COMMITTEE

NOVEMBER 15, 2012

EXTERNAL RELATIONS COMMITTEE

# ENERGY EFFICIENCY UPDATE

NOVEMBER 15, 2012



# Our VISION



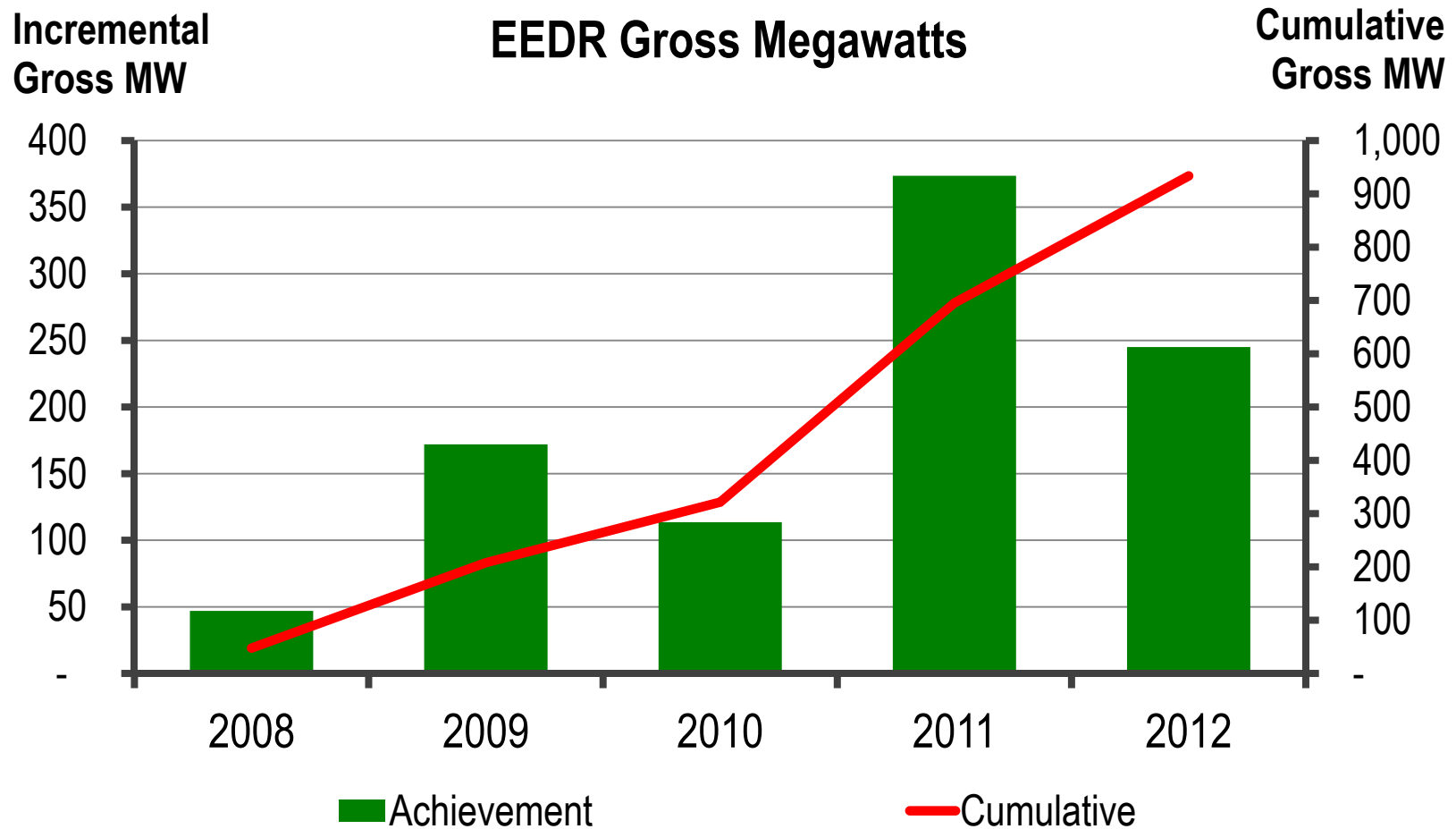
ONE OF THE NATION'S LEADING PROVIDERS OF LOW-COST  
AND CLEANER ENERGY BY 2020



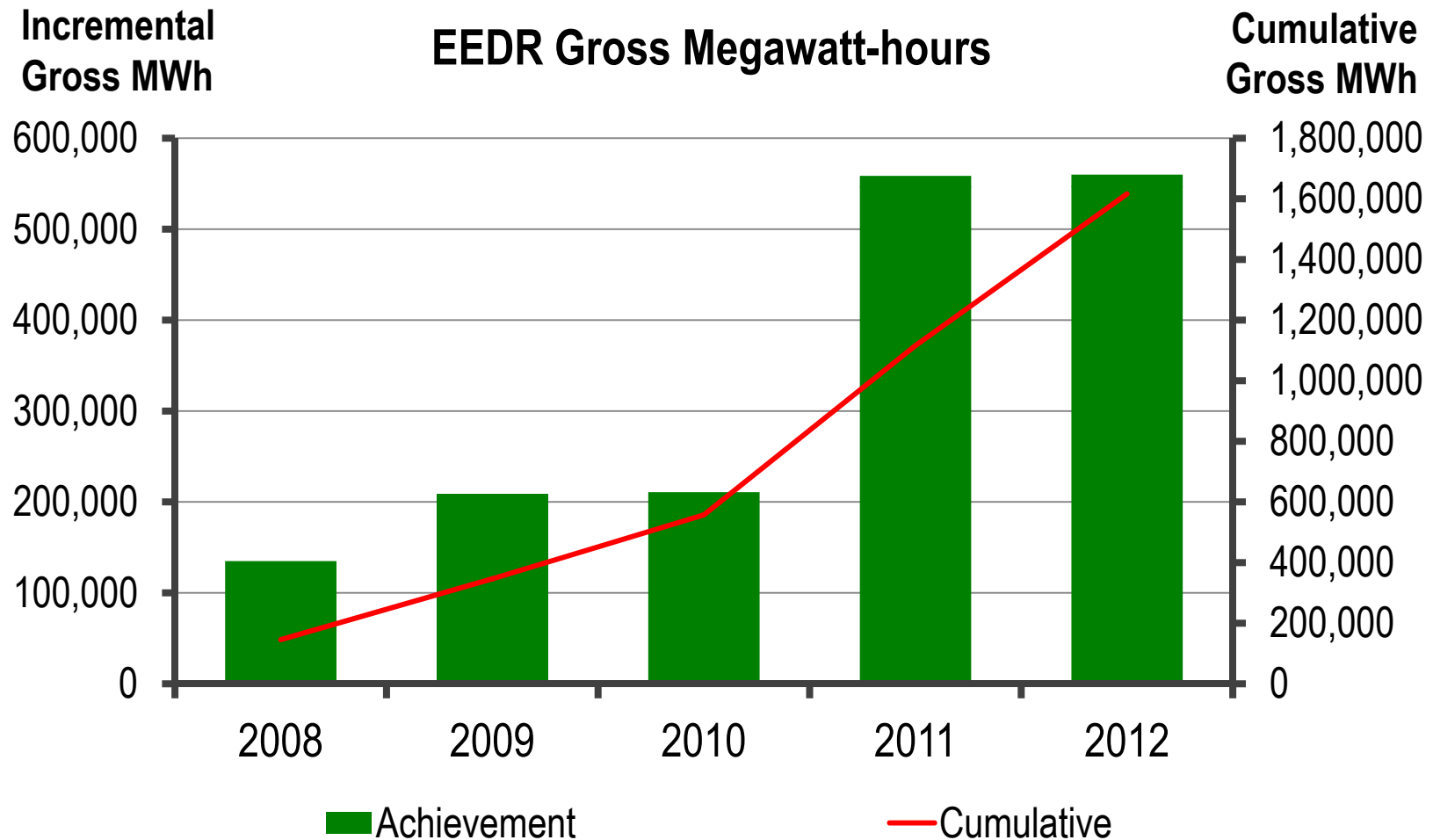
## Greater Energy Efficiency

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# EEDR PORTFOLIO EXCEEDS ANNUAL GOALS FIVE YEARS IN A ROW



## EEDR PORTFOLIO EXCEEDS ANNUAL GOALS FIVE YEARS IN A ROW



# TOP QUARTILE PERFORMANCE AT LOWER COST

## Benchmarking Results

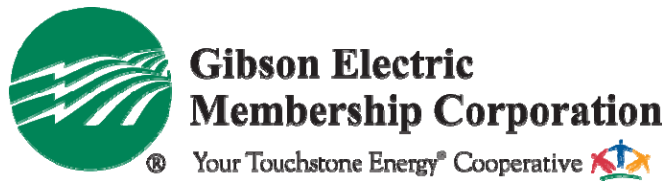
Peers: calendar year; TVA: fiscal year; Three-year averages

	Energy Savings Effects (MWh) Three-Year Average 2008 – 2010	Actual Peak Reduction (MW) Three-Year Average 2008 – 2010	Costs Per Actual Energy Effects (MWh) Three-Year Average 2008 – 2010
TVA Ranking	1 <sup>st</sup> Quartile	1 <sup>st</sup> Quartile	1 <sup>st</sup> Quartile
TVA	1,035,294	455	\$41
Top Quartile	696,400	261	\$46
Median	142,893	90	\$73
Bottom Quartile	48,061	24	\$137

- 1 Data Sources: U.S. Energy Information Administration, Form EIA-861, Annual Electric Power Industry Report, TVA Fiscal Year 2013 Benchmarking Notebook, TVA Financial Services. Note - Differences in utility valuation methods can impact results.
- 2 Decrease primarily due to timing of new and expiring agreements with TVA customers.
- 3 Three-year averages are used for leveling annual peak and capacity.

# SUCCESSSES WITH OUR PARTNERS

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# RESIDENTIAL VALUE

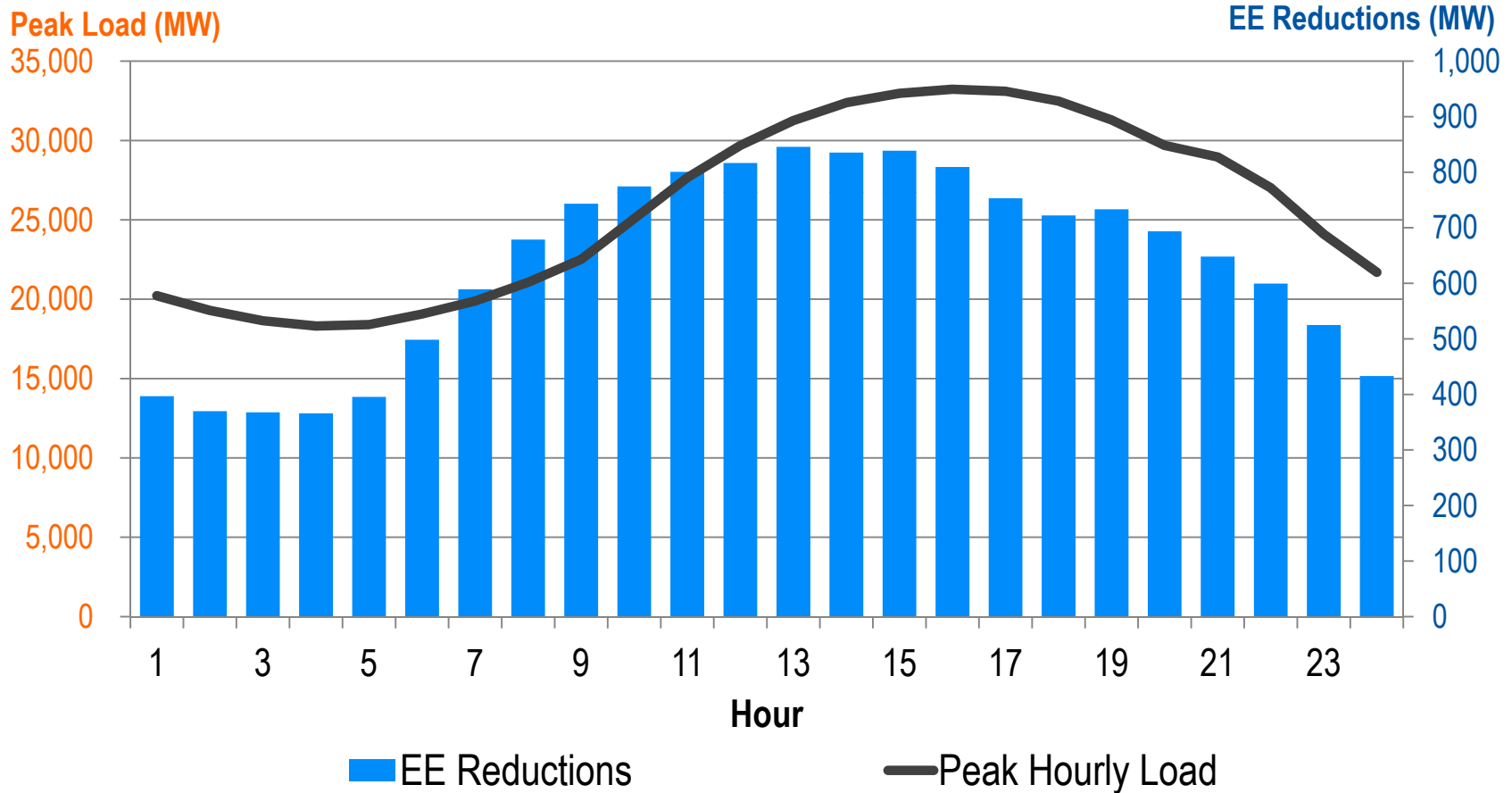
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- Lower bill
- Greater individual control
- Potential to use more electric devices

With devices like Nest T-stat and Blue Line monitors, residential consumers can access their energy use data



# HOURLY PEAK LOAD REDUCTION FROM ENERGY EFFICIENCY



Note: Energy efficiency includes non-dispatchable demand response.

# CONTINUOUS COMMITMENT FOR EEDR

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- Maintain top quartile leadership in key benchmarks
  - Energy Savings Effects (MWh)
  - Actual Peak Reduction (MW)
  - Costs per Actual Energy Effects (\$/MWh)
- Demonstrate Value of EEDR
  - Establish cost competitive 1,000 MW virtual power plant
  - Integral part of TVA generation portfolio
  - Build awareness Valley wide
  - Influence stakeholders, change standards upstream and down



EXTERNAL RELATIONS COMMITTEE

# ECONOMIC DEVELOPMENT FIVE YEAR REPORT

NOVEMBER 15, 2012

# OVERVIEW

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TVA Economic Development partners with local power companies, customers, regions, states and communities to serve as a catalyst for sustainable economic development:

## Recruit

- New companies and investments to the Valley that are viable now and into the future and complement TVA's anticipated load shape

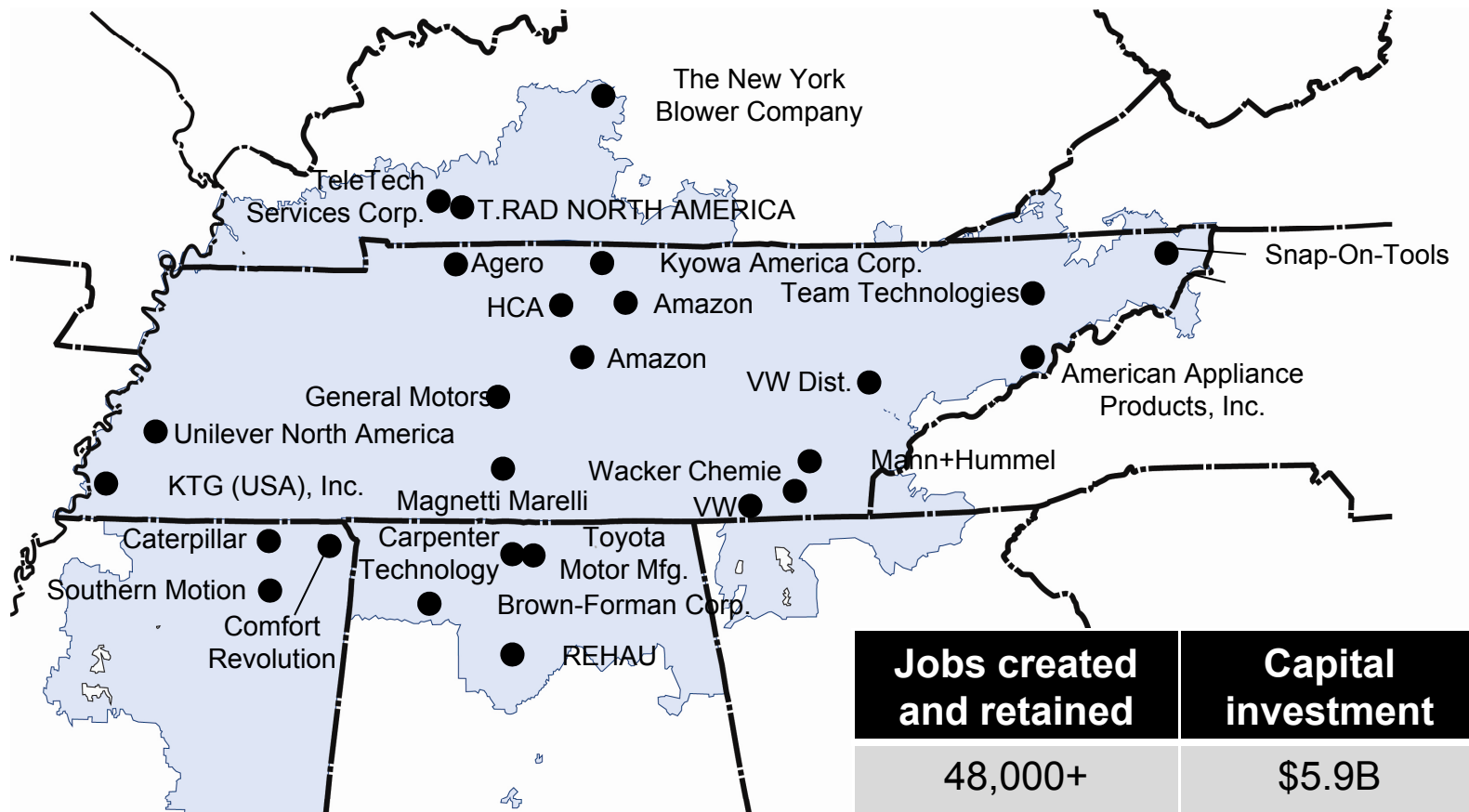
## Retain

- Existing businesses and industries to grow in a sustainable, energy efficient manner

## Assist

- Communities in being prepared for economic growth through training, capacity-building and technical services

# KEY FISCAL YEAR 2012 ANNOUNCEMENTS



# FISCAL YEAR 2012 PERFORMANCE HIGHLIGHTS

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- Site Selection magazine “Top Utilities for Economic Development” seven years in a row
- Gold Award from the International Economic Development Council (IEDC) for Excellence in Economic Development for Megasites Certification Program
- John Bradley named one of the “Top Ten People Who Made a Difference in the South” by Southern Business & Development magazine
- Helped recruit over 48,000 jobs with \$5.9 billion in capital investment

EXTERNAL RELATIONS COMMITTEE

# MUSCLE SHOALS REDEVELOPMENT PLAN

NOVEMBER 15, 2012

# FOR BOARD CONSIDERATION

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- Declare surplus and approve public auction sale of approximately 1,000 acres for redevelopment
- Delegate authority to grant easements for infrastructure or conservation purposes
- Authorize TVA management to approve the final Comprehensive Master Plan being co-produced with the Northwest Alabama Cooperative District

# BACKGROUND

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- Congress transferred the property to TVA from the War Department in 1933
- Property was used for chemical manufacture and fertilizer technology development
- TVA use has declined significantly over several decades



# DESIRED OUTCOME

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Complement TVA's Economic Development mission to create jobs and improve site utilization through a purposeful redevelopment plan created in partnership with local entities



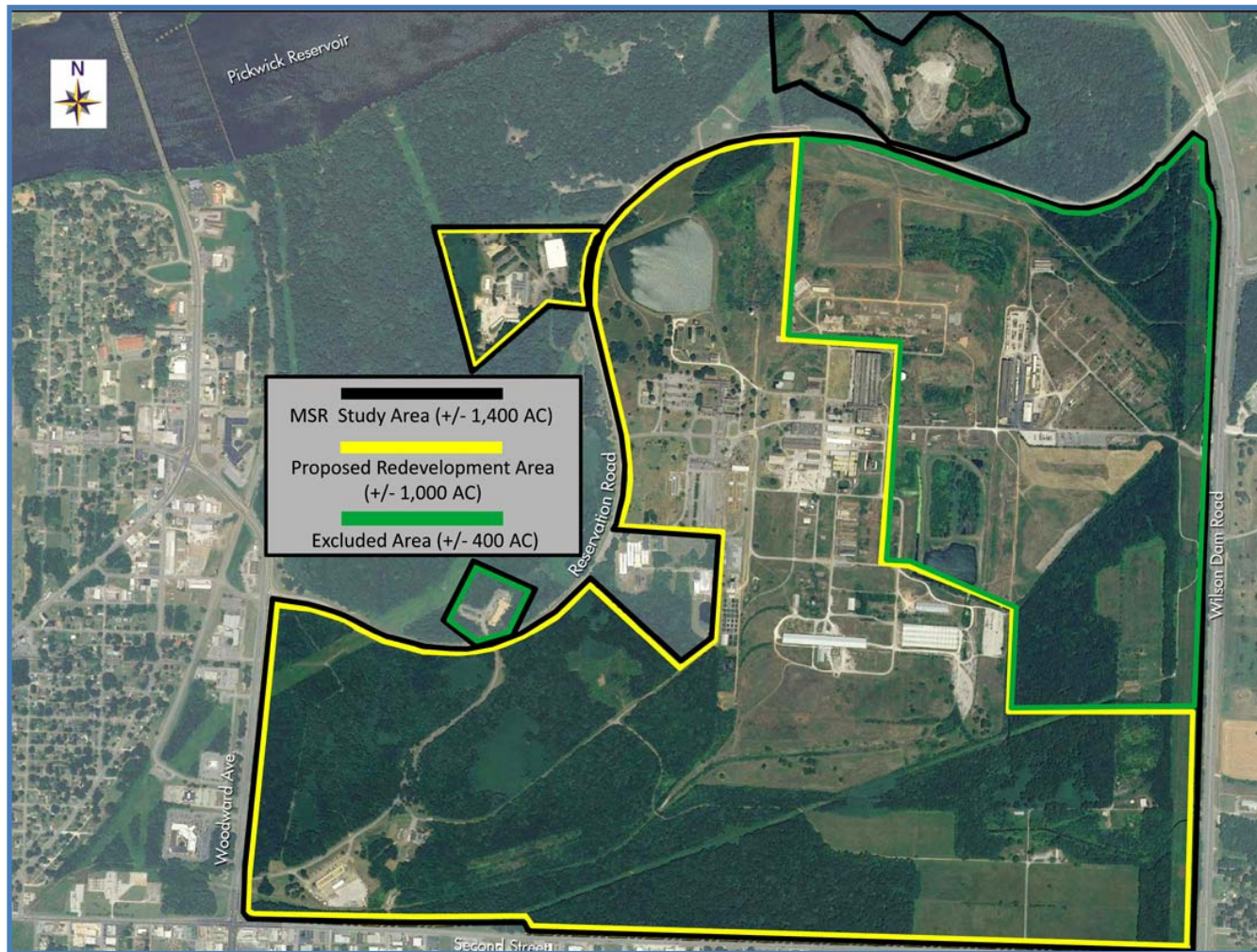


# NORTHWEST ALABAMA COOPERATIVE DISTRICT

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- Comprised of mayors from Florence, Muscle Shoals, Sheffield, and Tuscumbia, Alabama, as well as the county commissioners from Colbert and Lauderdale County
- Co-producing the Comprehensive Master Plan with TVA
- Governance and Management Plan will be submitted to TVA before auction

# DRAFT REDEVELOPMENT AREA PLAN



# RECOMMENDATION

---

- Declare surplus and approve public auction sale of approximately 1,000 acres for redevelopment
- Delegate authority to grant easements for infrastructure or conservation purposes
- Authorize TVA management to approve the final Comprehensive Master Plan being co-produced with the Northwest Alabama Cooperative District

EXTERNAL RELATIONS COMMITTEE

# RRSC APPOINTMENTS

NOVEMBER 15, 2012

# FOR BOARD CONSIDERATION

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- Approve the seventh term RRSC nominees
- Designate Russell Townsend to serve as the chairperson
- Authorize CEO to fill vacancies during the course of the seventh term after consultation with the External Relations Committee

# RRSC MEMBERSHIP

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- Seven of the members are nominated by the Governors of the Valley states
- RRSC charter requires that membership also include individuals representing the following groups:
  - distributors (4 representatives)
  - a direct-served customer of TVA
  - a beneficiary of TVA's navigation program
  - a beneficiary of TVA's flood control program
  - a recreational interest
  - an environmental interest

# PROPOSED MEMBERS

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**Russell Townsend**

Bryson City, North Carolina  
Designated as Council Chairperson

**Representative Mike Ball**

Huntsville, Alabama

**W.C. Nelson III** Blairsville, Georgia

**Phil Hazle** New Concord, Kentucky

**Jean Kellems Elmore** Tupelo, Mississippi

**Bill Forsyth** Murphy, North Carolina

**Bob Martineau** Nashville, Tennessee

**C. Adam Kinser** Jonesville, Virginia

**Karl Dudley** Selmer, Tennessee

**Mark Hommrich** Nashville, Tennessee

**Mark Iverson** Bowling Green, Kentucky

**Gary Joiner** Pennington Gap, Kentucky

**Mitch Jones** Knoxville, Tennessee

**Avis Kennedy** Nashville, Tennessee

**George Kitchens** Trinity, Alabama

**Brad Kreps** Abingdon, Virginia

**Tom Littlepage** Montgomery, Alabama

**Gary Myers** Brentwood, Tennessee

**Rhonda Rice** Knoxville, Tennessee

**Jack Simmons** Chattanooga, Tennessee

# RECOMMENDATION

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- Approve the seventh term RRSC nominees
- Designate Russell Townsend to serve as the chairperson
- Authorize CEO to fill vacancies during the course of the seventh term after consultations with the External Relations Committee





# EXTERNAL RELATIONS

COMMITTEE

NOVEMBER 15, 2012

RESOLUTION HONORING

**WILLIAM GRAVES**  
**MARILYN BROWN**

NOVEMBER 15, 2012



TVA BOARD  
**MEETING**

NOVEMBER 15, 2012