TVA's Strategy for Future Energy Development

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The Storms of April, 2011

Damage to TVA's System

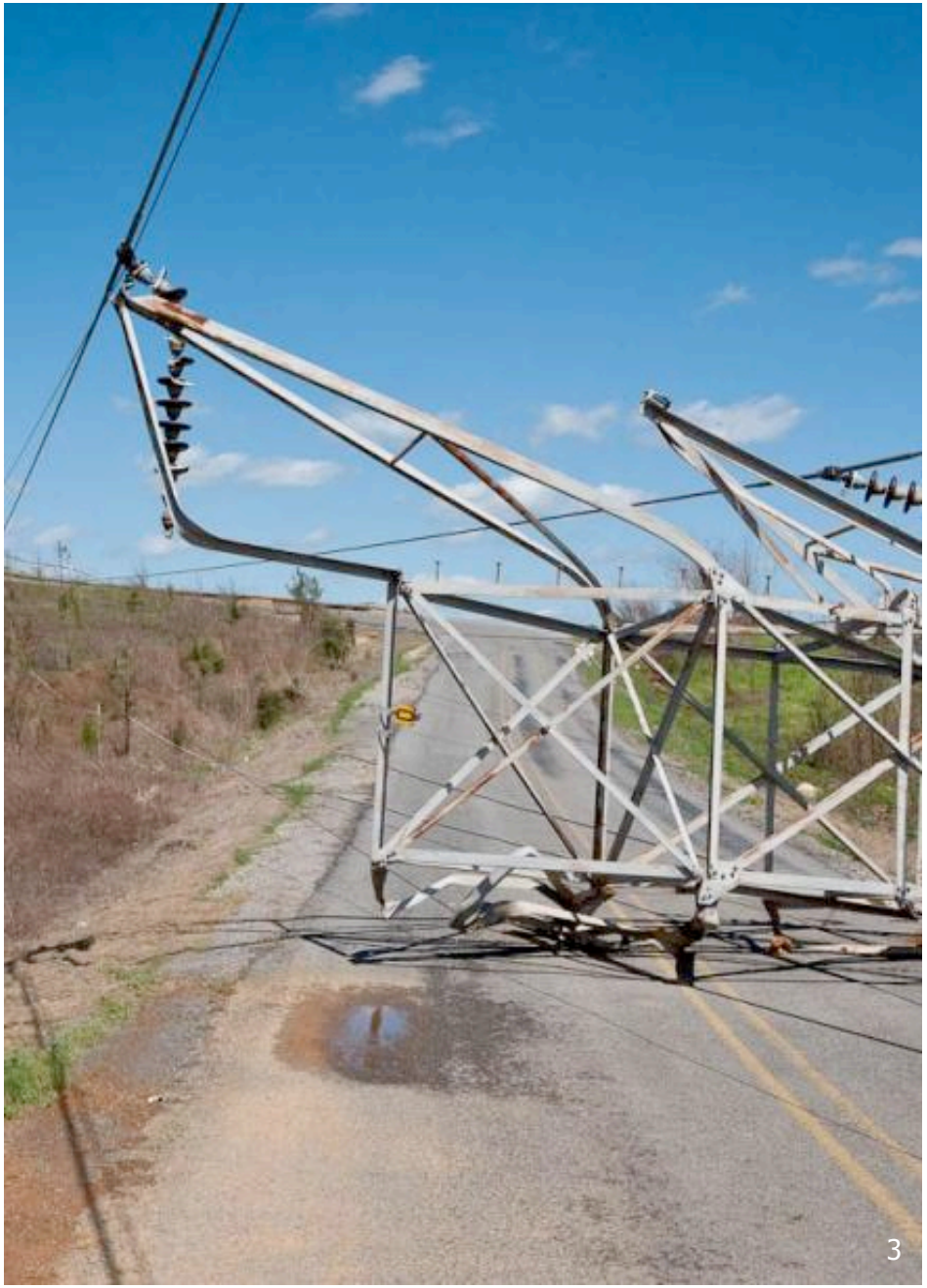
The TVA transmission system suffered the worst damage in its history

353 transmission structures damaged; 108 lines out of service

128 customer connection points interrupted

850,000 customers lost service

Several TVA plants shut down



Rapid Restoration

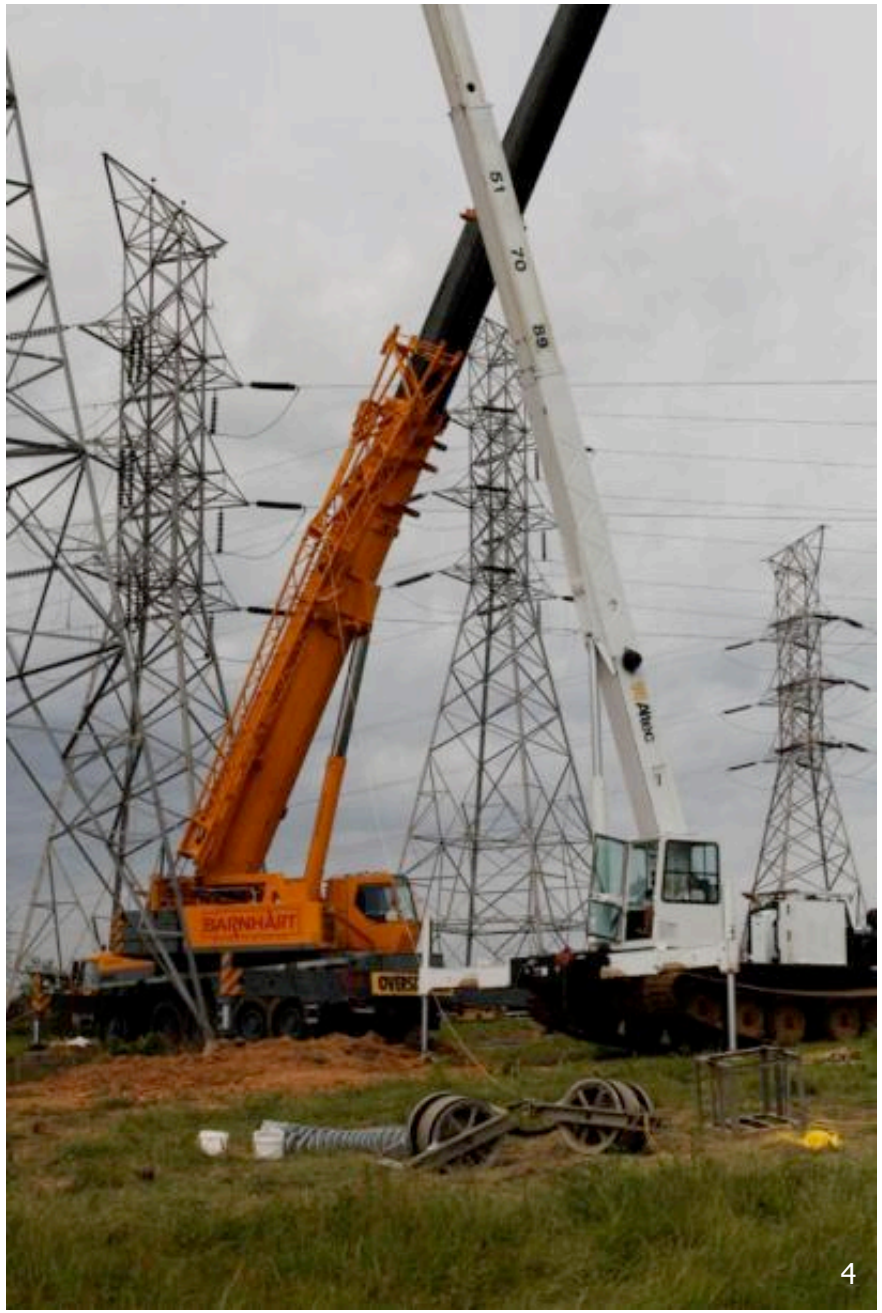
4,000 workers labored 24/7 to restore transmission service

One week later

- 122 of 128 customer connections were in service
- Most large industries had some power supply

System is stable and secure

Full restoration of the 500-kV system likely by mid-July



Effects on Browns Ferry

Lost most off-site power;
all 3 units shut down safely

Declared an Unusual Event

Diesel generators powered shutdown cooling and reactors stayed in a safe shutdown condition

Re-established off-site power 5 days after storms

Rebuilding the 500-kV system will take months and will limit the plant's output

TVA's Vision

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

We Will . . .

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

And by improving our core business to continue providing **low rates, high reliability & responsible stewardship**

Nation's Leader in Improving Air Quality

Cleaner Power Production

- Lower production from high emission generators
- Significantly increase production from low-emission electricity generators

Reduce Emissions

- Further reduce SO_2
- No_x, mercury and
- particulate emissions from
- TVA plants

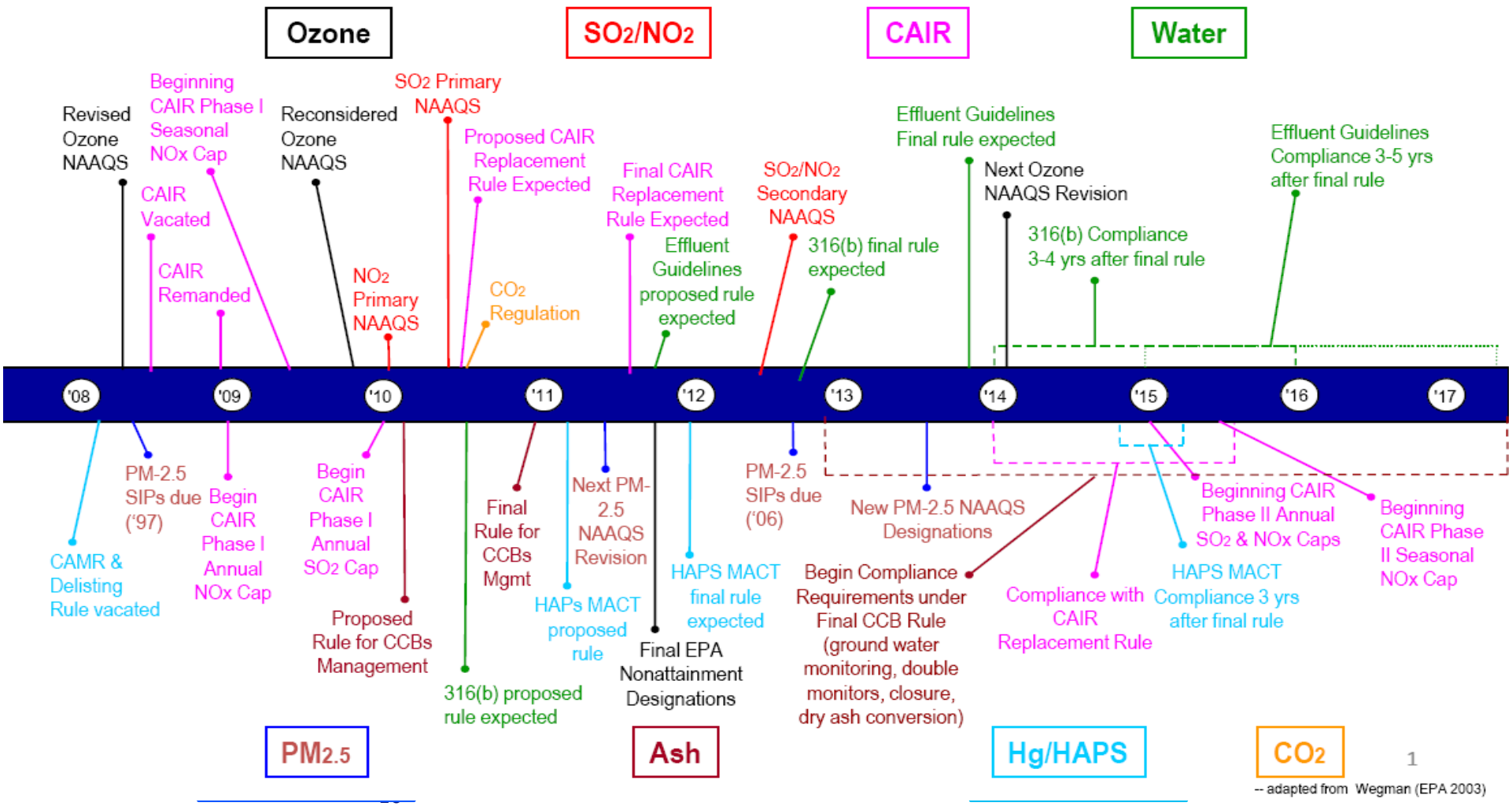
Coal Plant Decisions

Why:

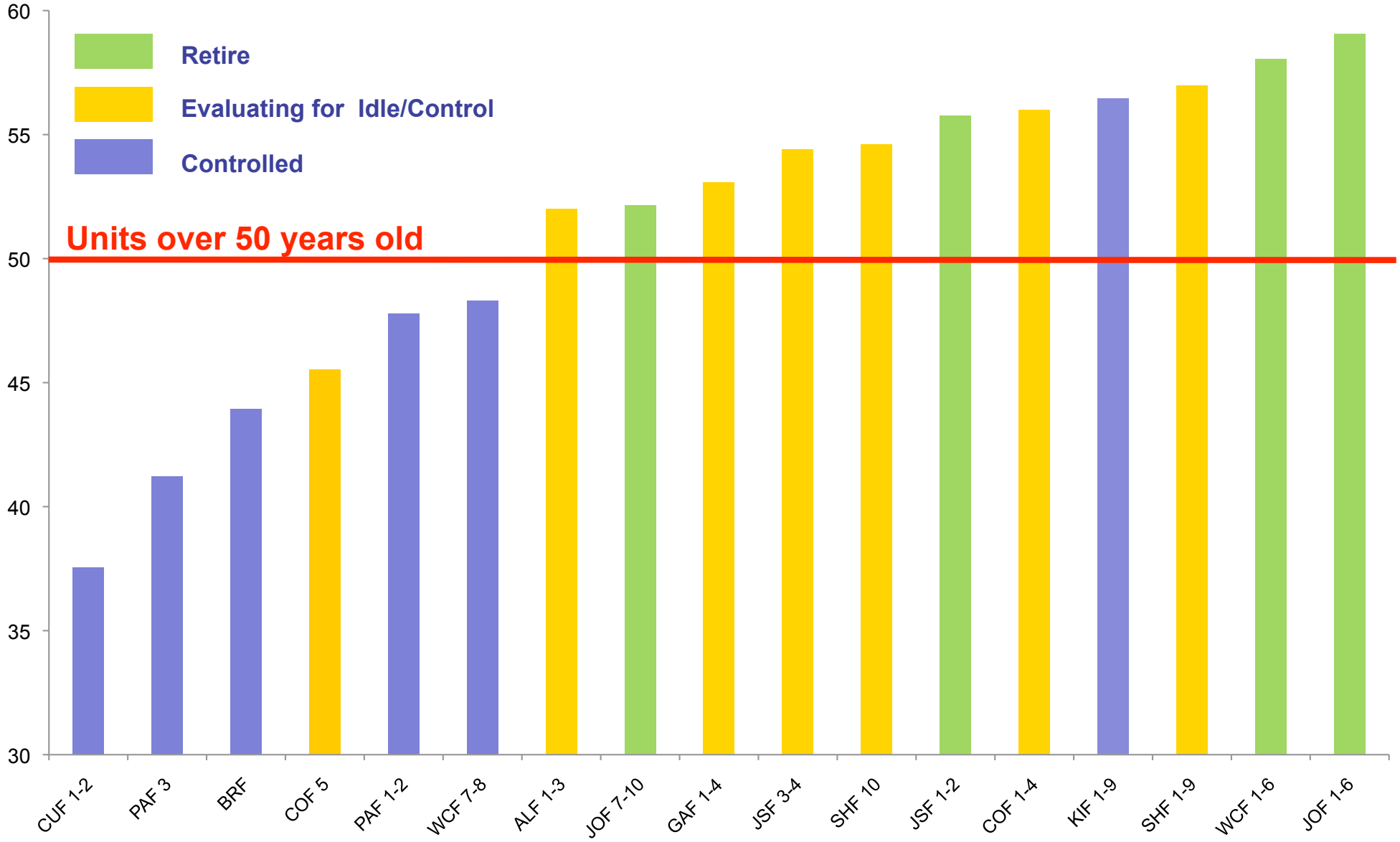
- Legal and regulatory risks
- Pending regulations
- Age of coal units
- Emissions from older units
- Cost of older units
- Other utilities' experience

Pending Regulations

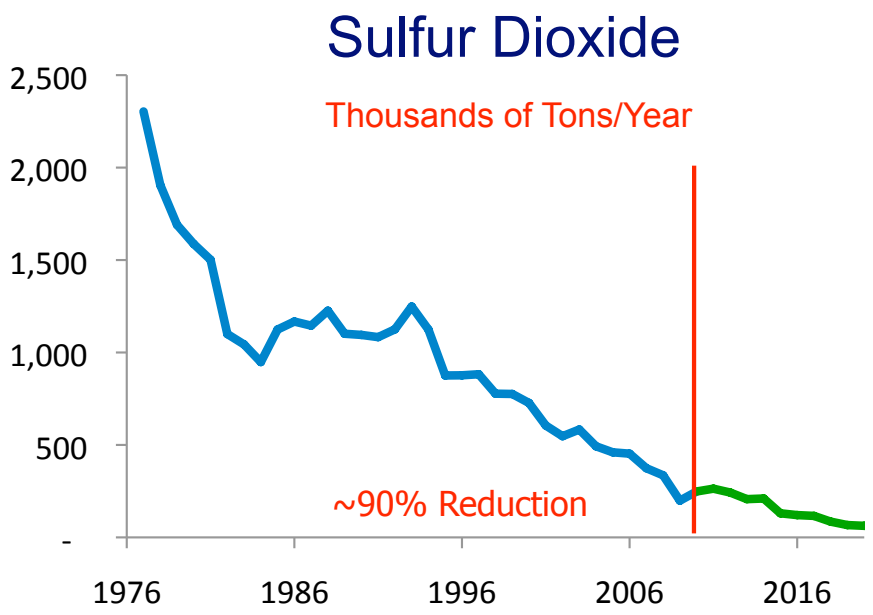
Expected Regulations Affecting Coal—Timing May Vary

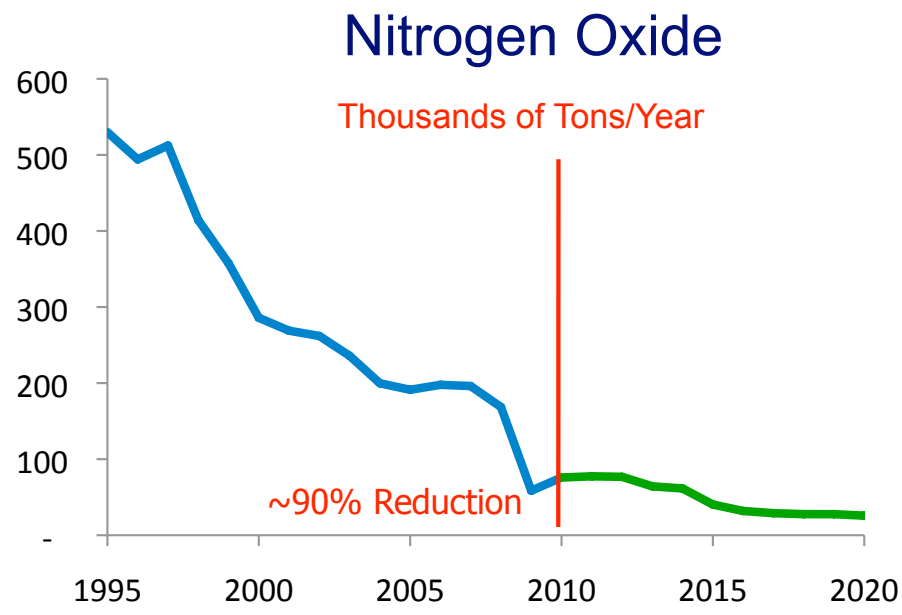


Age of Coal Units

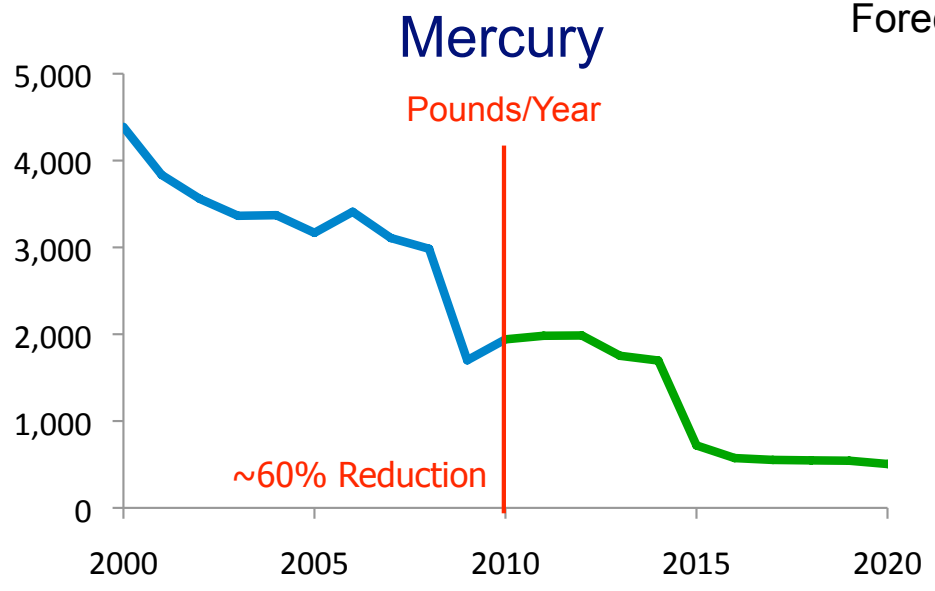


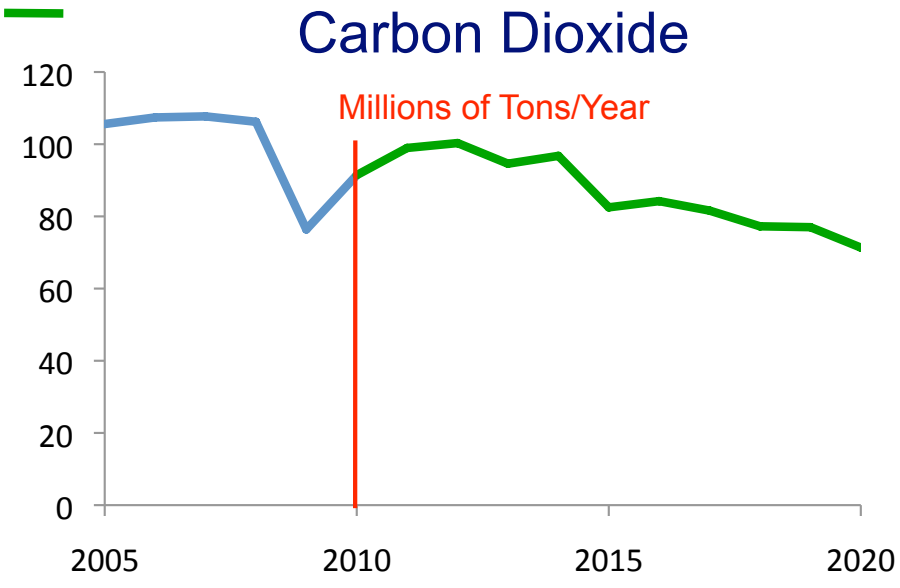
TVA's Emission Reductions





Historical
Forecast





Other Announced Retirements

Utility	Units	Megawatts
American Electric	26	6,000
Duke	21	1,877
Progress	11	1,533
Southern	4	1,094
Xcel	7	877
Exelon	3	746
Dynegy	4	455
AES	6	455
NRG	3	364
Totals	85	13,401

Plant Retirement Key Takeaways

Age, new regulations and the opportunity to manage risks and costs are driving coal unit retirements.

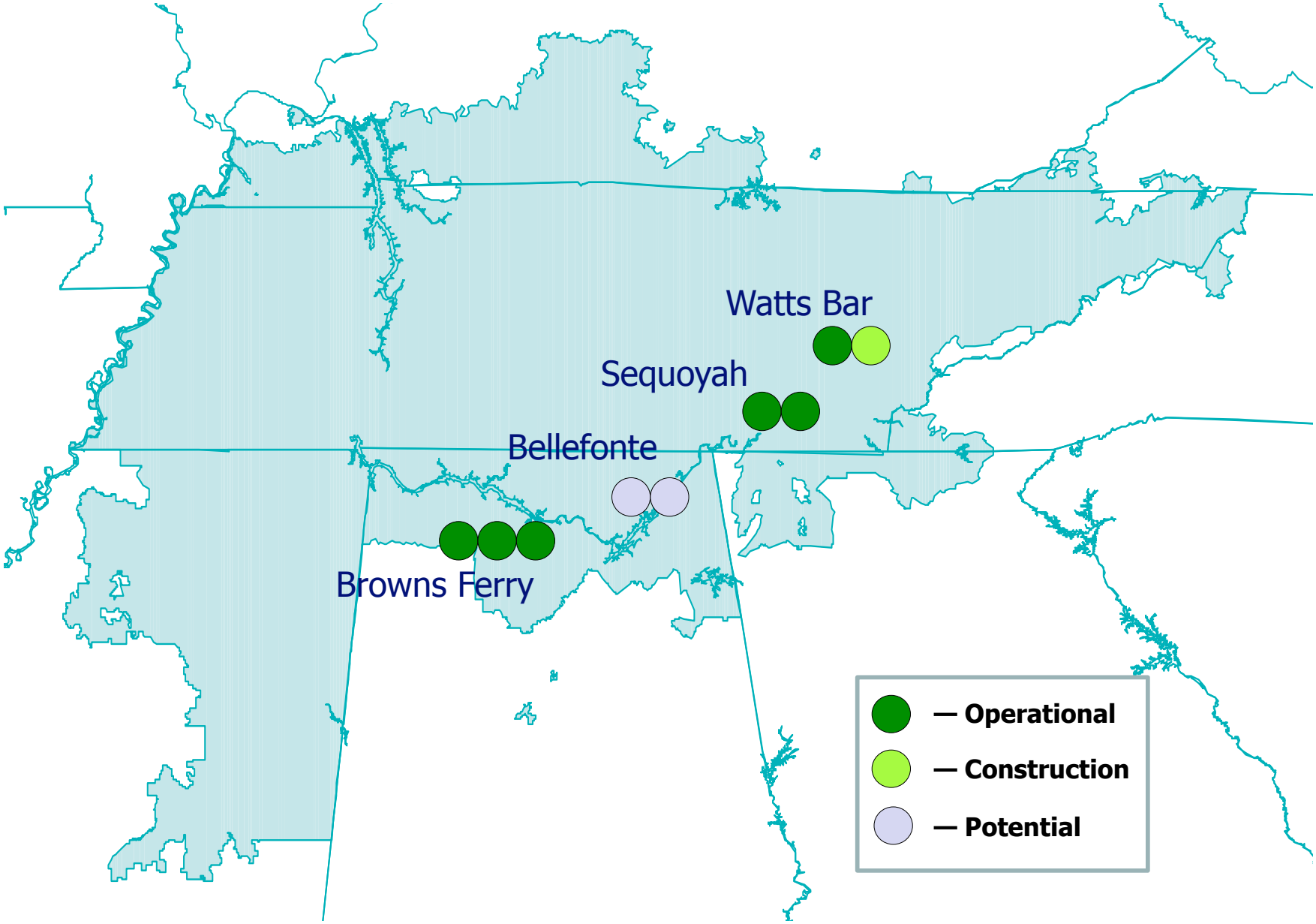
After retiring 18 units, the coal fleet still will have the largest generating capacity on the TVA system.

TVA will maintain an ample, reliable power supply.

New generation

- Lead the Nation in delivery of new nuclear capacity

Our Nuclear Fleet Today



New Nuclear Projects

Watts Bar Unit 2

- 1,180 megawatts
- Commercial operation in 2013
- On time and within budget

Bellefonte Unit 1

- 1,260 megawatts
- Studies support completing Unit 1
- TVA board decision expected this year

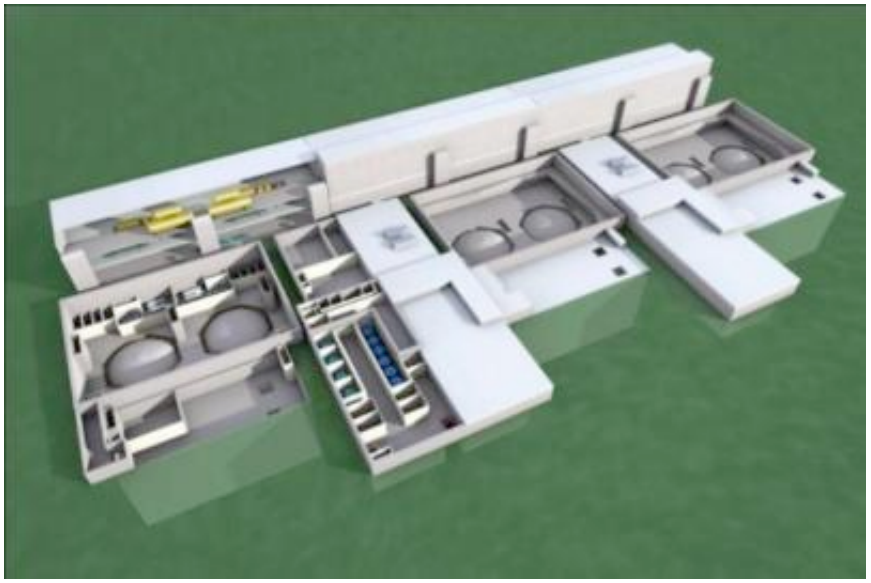
In Summary

Bellefonte will be:

- Lower in operating costs with higher reliability than coal or gas
- Fueled from North American supplies
- Cleaner than any realistic alternative
- Beneficial to the community
- Safe

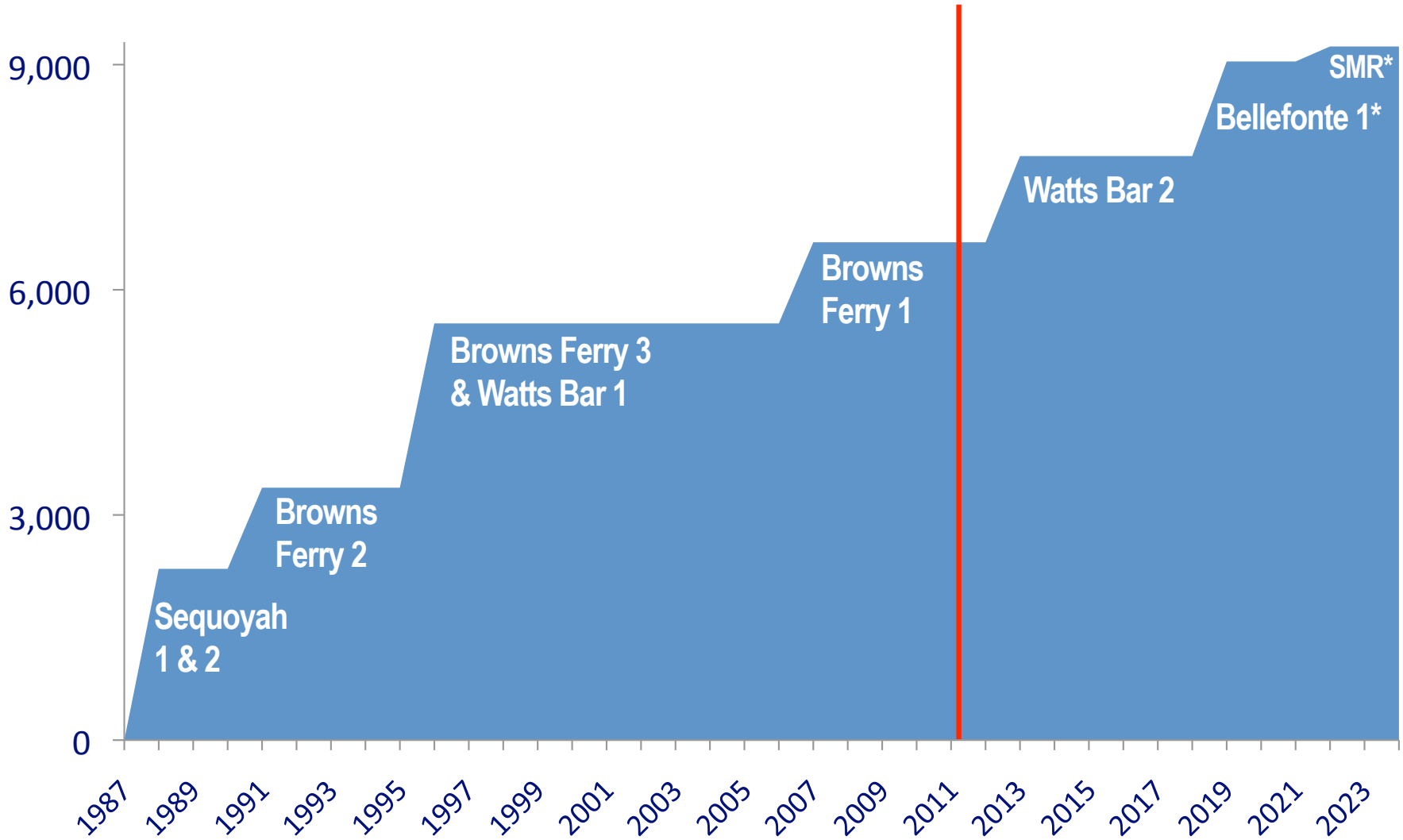
Small Modular Reactors

- 125-megawatt reactors would be built in groups
- Could replace aging coal units and use existing sites and transmission
- "Passive" safety design
- 4 to 5-year fuel cycle
- mPower group plans to demonstrate this technology by 2020



Current and Potential Nuclear Fleet

TVA Nuclear Capacity in Megawatts



*Pending Approval

Japanese Tsunami

TVA's Response

- Monitoring events closely in Japan
- Reviewing readiness for natural or man-made disasters
- Identifying vulnerabilities
- Providing short, intermediate, and long-term recommendations for TVA sites
- Communicating accurate and timely information

Key Nuclear Takeaways

TVA plants aren't exposed to major earthquakes or tsunamis.

TVA plants have significant design differences and safety retrofits, compared to Japan's.

We're planning for simultaneous natural disasters.

We're incorporating lessons learned from Japan.

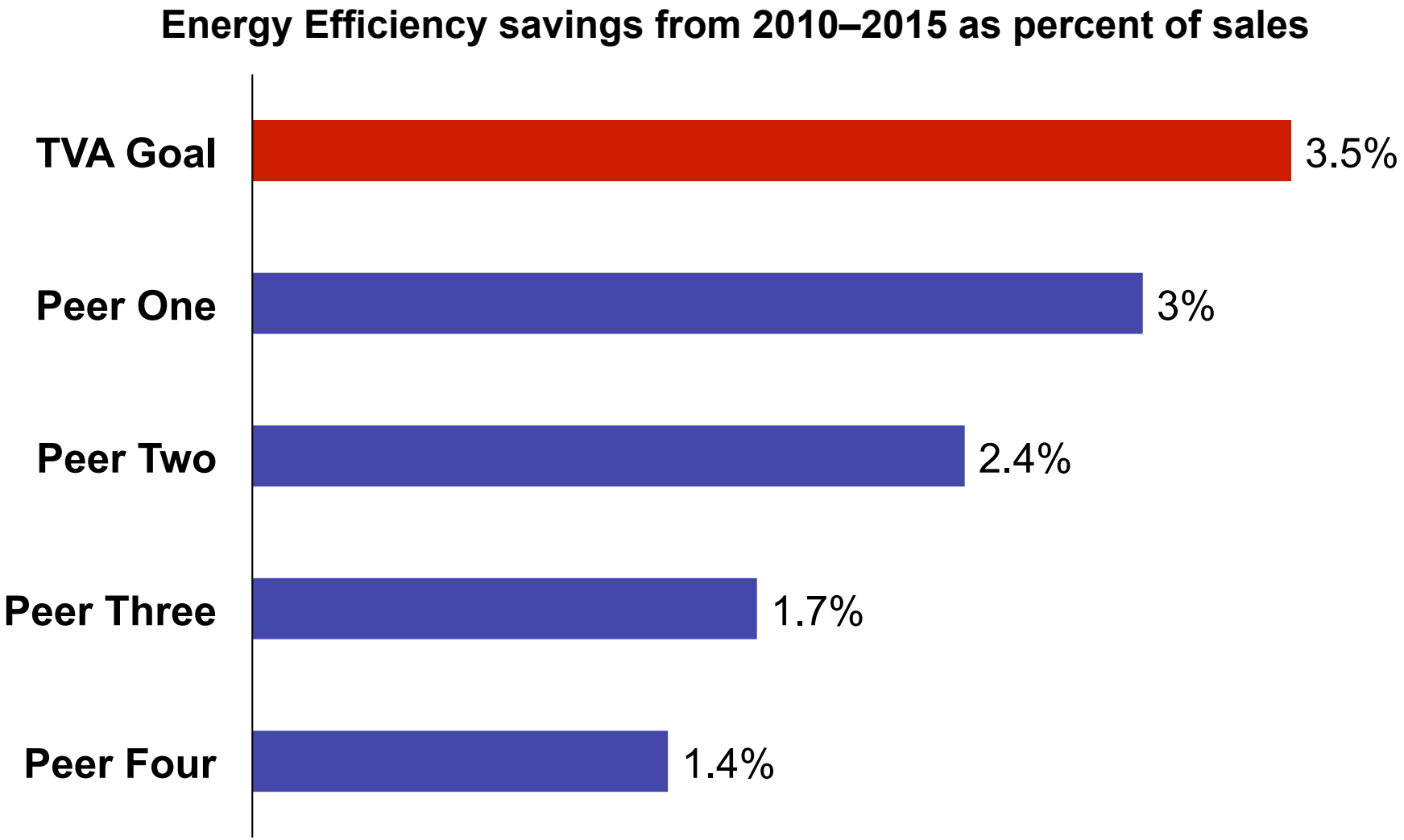
We're continuing with our plans to expand the fleet.

TVA's nuclear plants remain safe.

Energy Efficiency

- Help consumers and businesses use energy more efficiently and save money

Energy Efficiency Program Goal



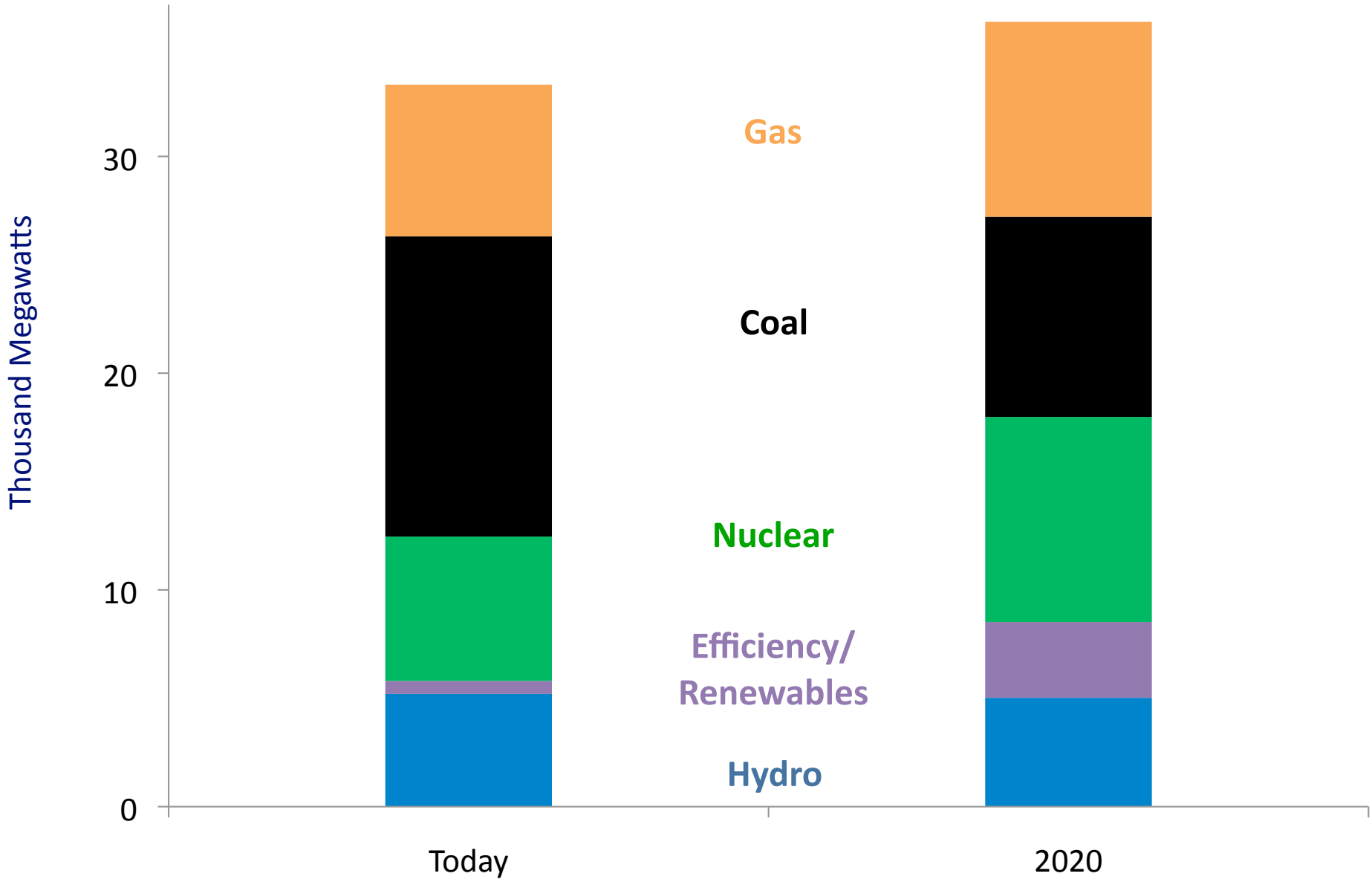
Demand Management

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

Sufficient Capacity for 2020

2011 Firm Capacity	36,200
Coal Retirements	-2,700
Expected Additions	
Energy Efficiency	2,900
Nuclear	2,800
Gas	2,000
Estimated Total Capacity by 2020	41,200
2020 Load and Reserves Forecast	40,150
±5% on Load Requirements	42,150 -38,150

A More Balanced Power Supply



Our VISION

TVA

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

Low Rates

Cleaner Air

High Reliability

More Nuclear Generation

Responsibility

Greater Energy Efficiency

Acting to meet the region's needs for the future, while improving our core business today.


TVA