

TVA's Coal Procurement Strategy – Flexibility North Carolina Coal Institute's Spring Conference

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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

Market Forces Impact TVA

- **Economic Growth** – Currently slow, but the Tennessee Valley is poised for a manufacturing rebound
- **Efficiency** – Technological advances allow consumer control of energy use; new appliances, digital manufacturing, etc.
- **Nuclear** – High capital investment; low cost fuel
- **Gas** – Game-changer for the power industry
- **Coal** – Low natural gas prices impact demand more than regulations; in the short term

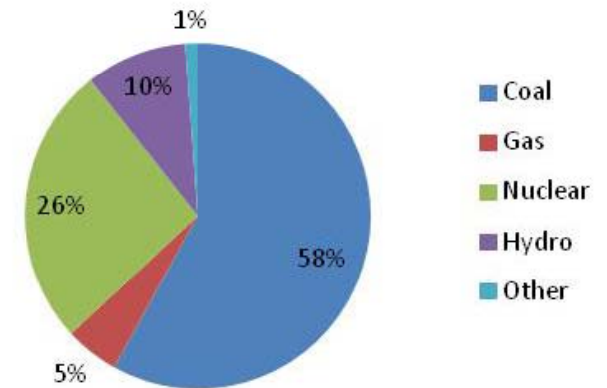


TVA Generation Overview

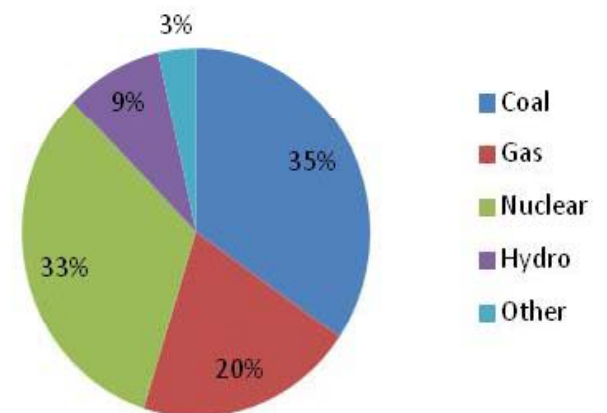
In **2007**, about 58% of TVA's electricity was produced from coal-fired plants

The **2012** generation mix illustrates the shift from coal as the primary energy source to a more balanced portfolio.

2007 Generation Mix



2012 Generation Mix

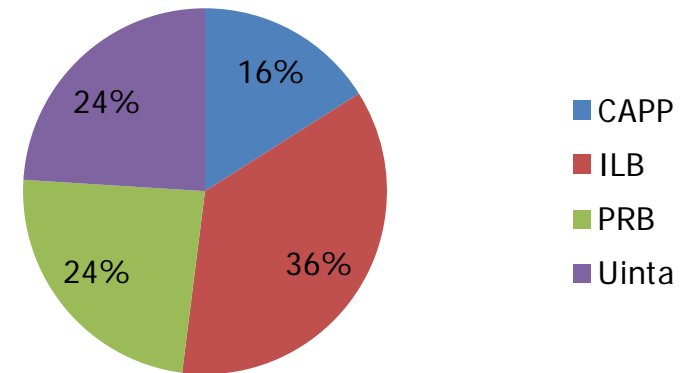


TVA Coal Burn by Basin

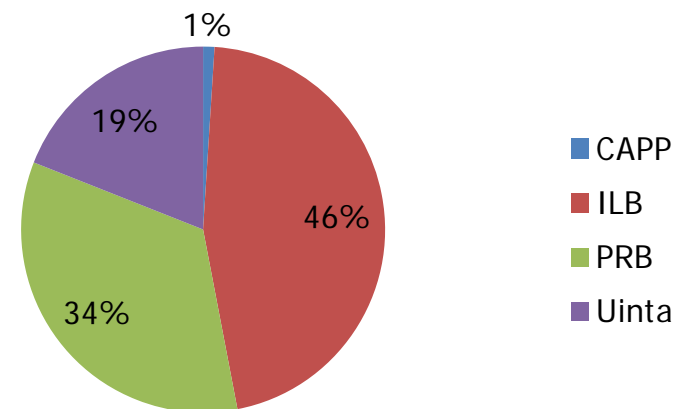
In **2007**, TVA burned coal from all four major basins approximately equally; slightly favoring Illinois Basin (ILB)

As the portfolio of generating assets changed and natural gas prices fell in **2012**, TVA's generation from coal was reduced and the mix of coals shifted further towards the Illinois and Powder River Basins

2007 Coal Receipts (by basin)

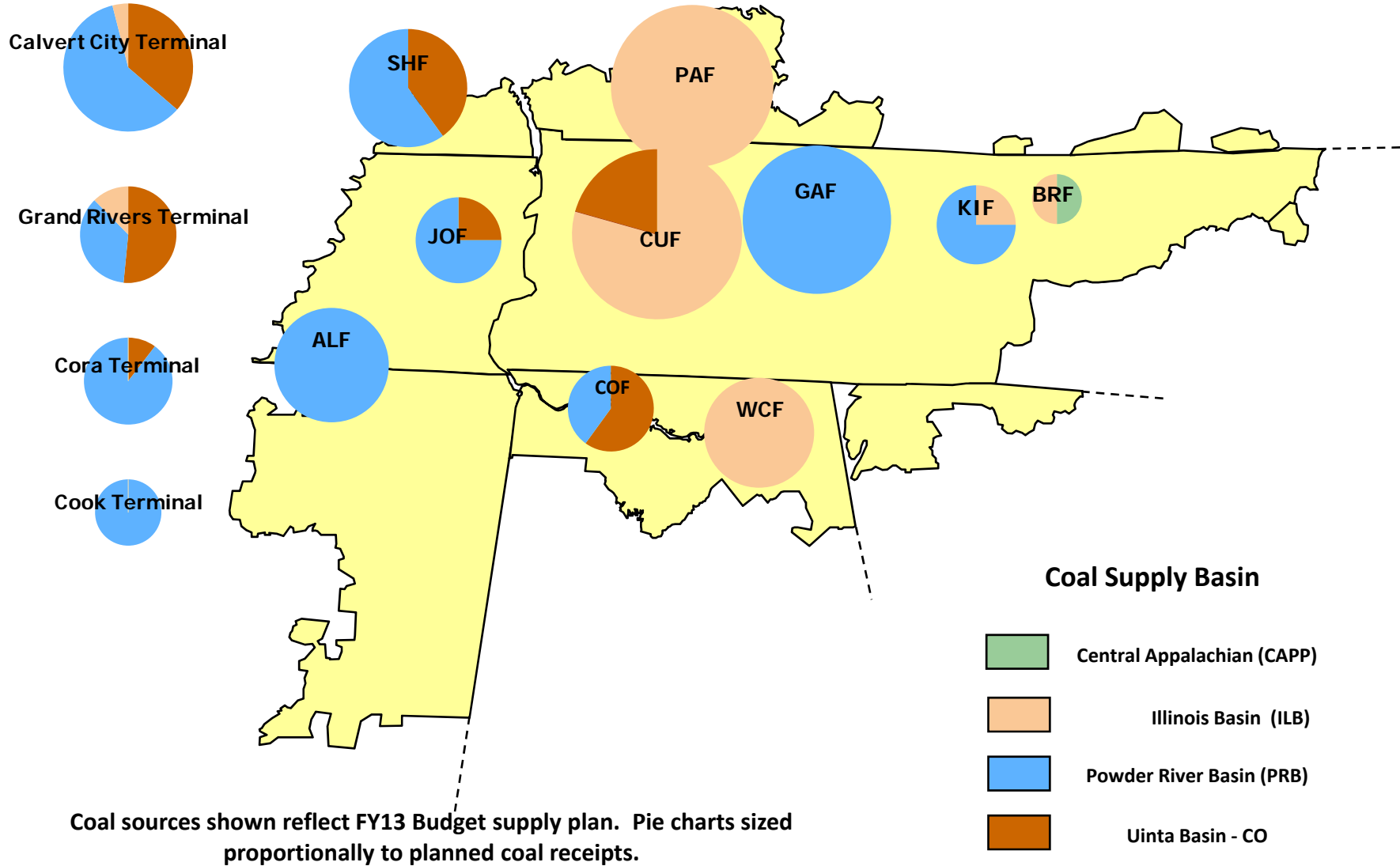


2012 Coal Receipts (by basin)





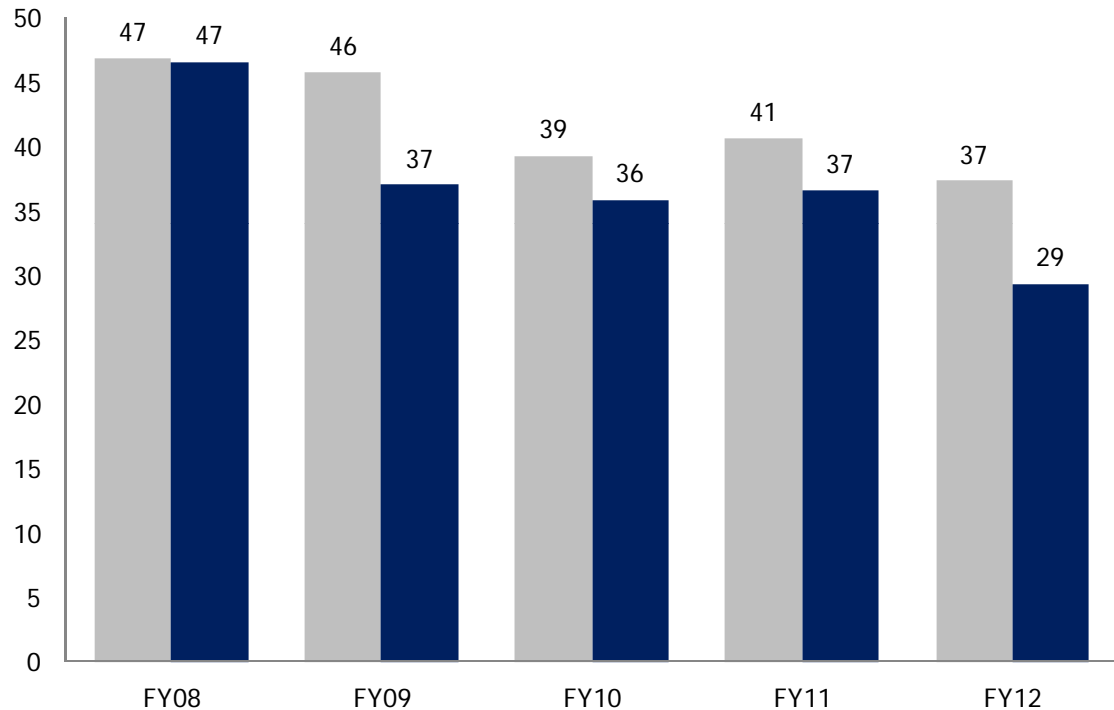
Coal Supply by Basin





TVA History

- Historically, TVA has burned approximately 46M tons/year (FY05 – FY08)
- Legacy contracts were based on historical coal generation requirements
- During FY09 and FY10 the generation profile changed from historical trends, resulting in long coal positions
- Coal on gas competition created a downward shift in coal generation beginning in FY09
- FY13 volumes are currently forecasted at 33 million tons*

Actual FY12 Coal burn decreased 8 M tons compared to Budget

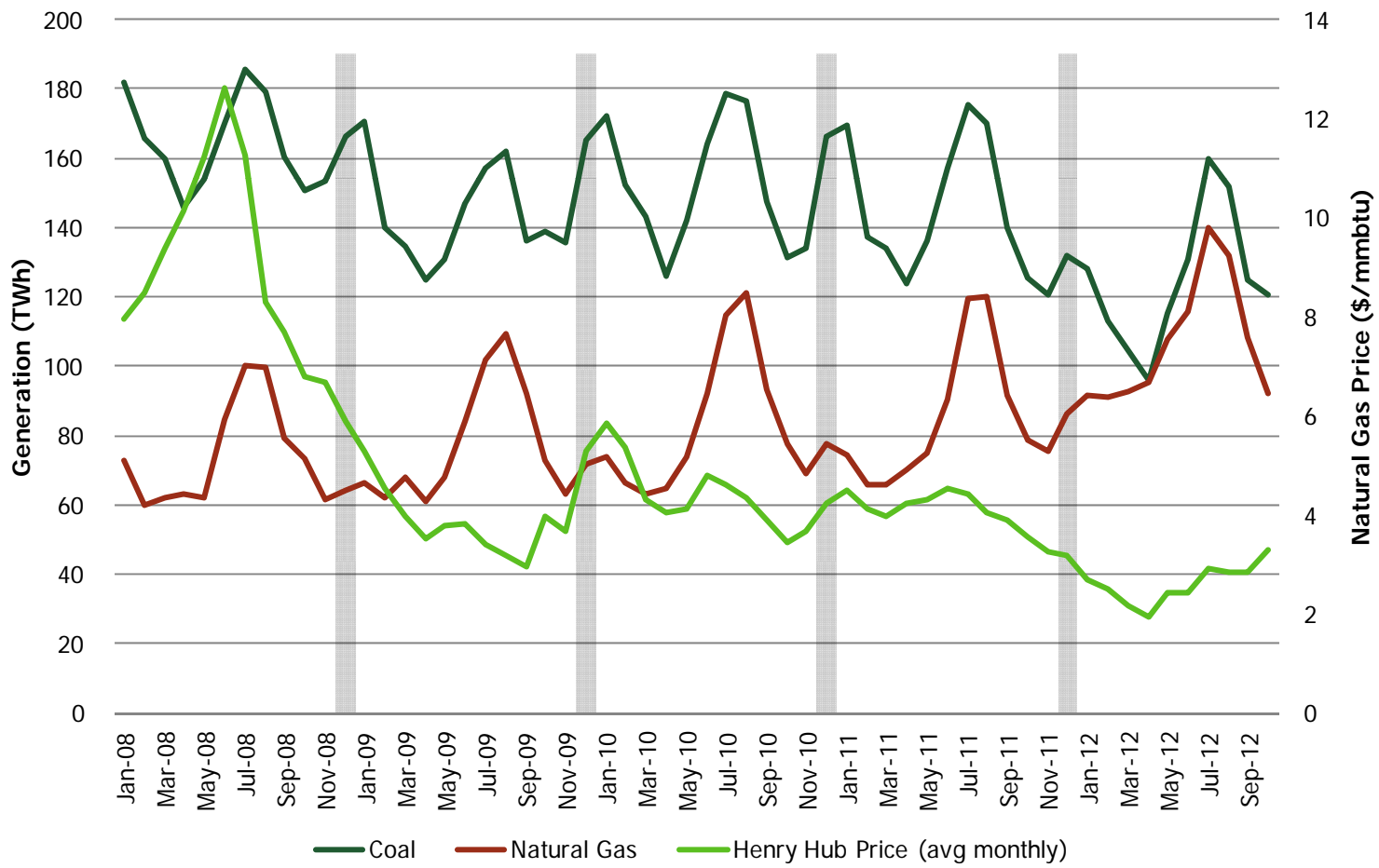


	Budgeted Volume (Mton)	46.89	45.75	39.31	40.69	37.33
	Actual Volume (Mton)	46.31	36.94	35.67	36.65	29.38
	Avg. Actual Henry Hub Gas Price	\$9.03	\$4.47	\$4.52	\$4.13	\$2.73



Fuel Switching: Coal & Gas

As gas prices fell in 2012, TVA and many other utilities increased gas-fired generation.

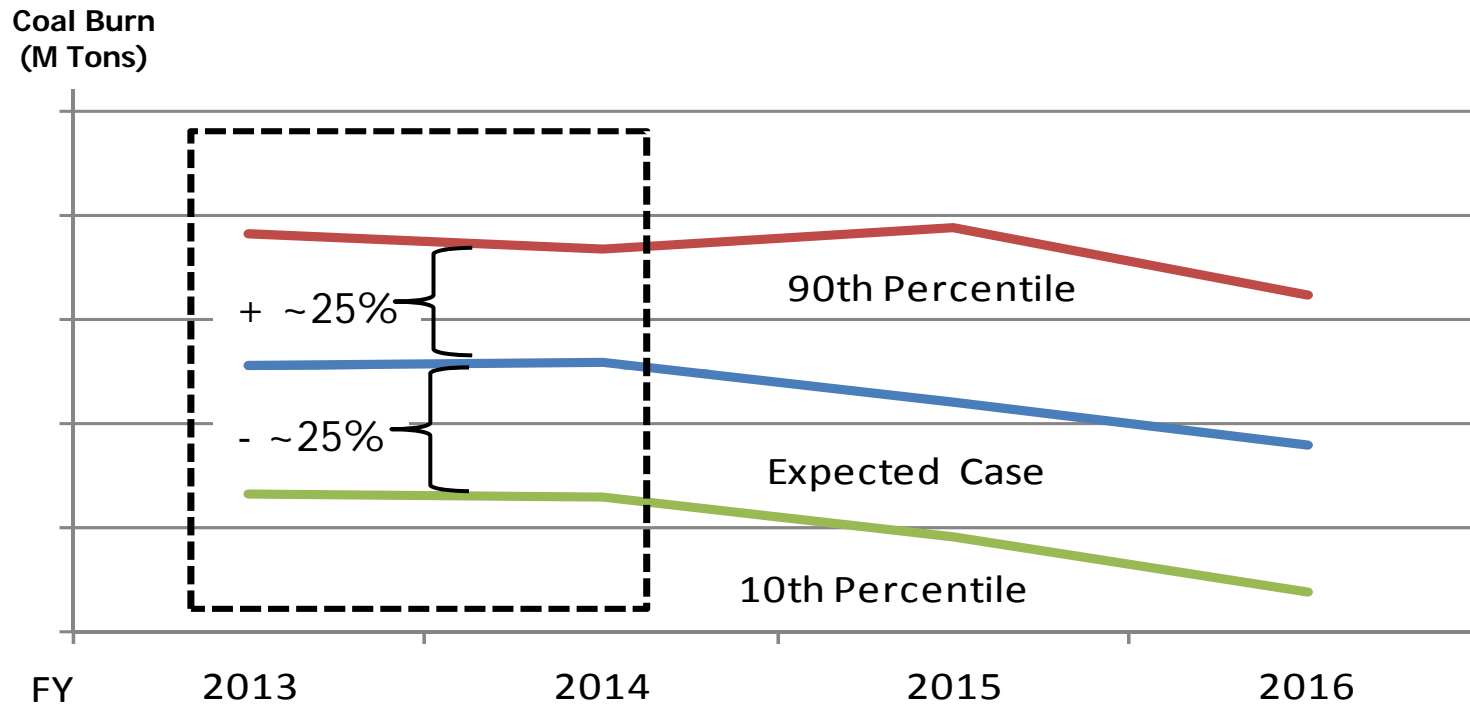


Source: Generation amounts from Energy Information Administration, form EIA-923; Henry Hub prices from SNL Energy, Henry Hub Spot Index

TVA Restricted Information – Deliberative And Pre-Decisional Privileged



Sensitivity Analysis – Value of Flexibility



The expected range of gas prices will require “operational flexibility” in both TVA’s gas and coal portfolios

Latest move in gas prices is toward the upper end of the range

- Spot price \$3.13 to 4.18
- Cal 14 \$3.93 to \$4.28
- Cal 15 \$4.19 to \$4.29



Coal & Gas Services Vision and Focus Areas

Provide reliable, cost-effective, and flexible fuel supply for the TVA generation fleet

Focus Area	Definition
Reliability	Maintain a reliable fuel supply with strategies designed to address both short-term disruptions and long-term expectations
Cost	Continually look for opportunities to reduce the overall cost of generation (fuel, operations & maintenance, capital, etc.)
<i>Flexibility</i>	<i>Increase contractual and functional flexibility with layered-supply strategies to improve responses to market changes</i> <ul style="list-style-type: none">• Test burn to increase fuels approved per plant• Identify fuels that can be shared and burned at multiple plants• Look for contract optionality (volume and price)• Look for transportation flexibility – commitments to burns not minimums

