

**The Coal Institute
43rd Annual Summer Trade Seminar**



Competitive Threats to Coal

**Hans Daniels, EVP
Doyle Trading Consultants, LLC**

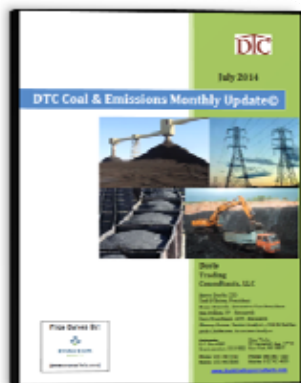
**Kingston Plantation
Myrtle Beach, SC
July 14, 2014**



Disclaimer

*The data, market news, commentary and opinion contained in this publication (“Content”) are for informational purposes only. Content is not intended to be used, nor should it be used, as the primary basis for making trading or investment decisions. Specifically, Content should not be considered, either implicitly or explicitly, as a recommendation to buy, sell, hold, or engage in any type of transaction. While we at **Doyle Trading Consultants** use our best efforts to provide timely and accurate data and market news, we do not guarantee the timeliness, accuracy, reliability or completeness of any such information. We shall not be liable for any errors in Content or delays in the transmission of any Content.*

Doyle Trading Consultants



Coal Subscription Package

- ✓ Highly regarded market commentary, analysis and price recap
- ✓ Global and U.S. coverage

Consulting Service

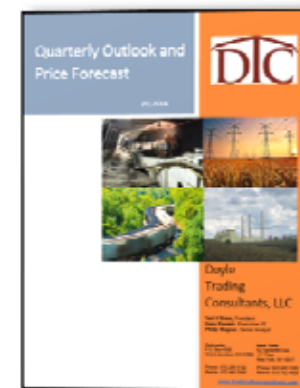
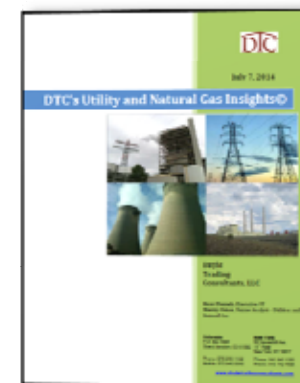
- ✓ Boardroom market presentations
- ✓ Fuel procurement strategies
- ✓ Customized price forecasts
- ✓ Everything related to coal

Utilities and Natgas Subscription Package

- ✓ Data, commentary and analysis of the US utility and natgas markets

Quarterly Coal Outlook and Price Forecast

- ✓ Our newest offering provides the industry's most granular look at current and forecasted **supply, demand, exports, inventory and prices**



Want an edge on the market? Please contact Vicky Bray for a free 30-day trial.

Colorado Office:
751 Horizon Court Suite 240
Grand Junction, CO 81506
Phone: +1 970 241 1510
Vicky Bray
Director of Client Services

New York City Office:
52 Vanderbilt Avenue 11th Floor
New York, NY 10017
Phone: +1 646 840 1300
Ted O'Brien
CEO



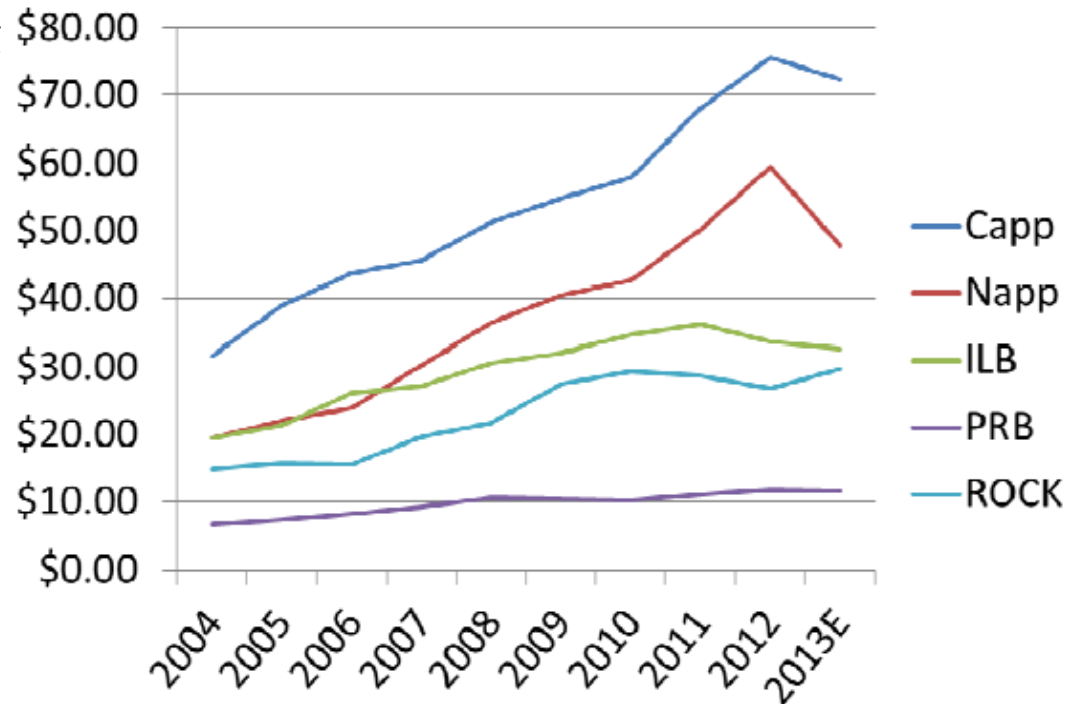
Competitive Threats to Coal

- Supply
 - Mining costs
 - Falling production
 - Cash reserves
- Demand
 - Competing Fuels
 - Wind, Nukes and Gas
 - Predatory Pricing?
 - Retirements
 - Impact of upcoming coal unit retirements
 - Polar Vortex

Supply Threats

Mining Costs Falling after Rapid Rise

- Increased environmental and safety regulations are squeezing margins
 - Capp hit hardest
 - ILB costs largely unchanged since 2010 as longwall operations ramp up
 - Fall in costs masked by high-cost closures
- Hundreds of mines either closing for good or curtailing operations



Source: Corporate 10Ks, DTC Research

Falling Prices Lead to Falling Production

- Capp cuts continuing
 - More cuts likely in 2014
- Overall US production is flat
 - 2011 – 1,121 mm
 - 2012 – 1,037 mm
 - 2013 – 1,003 mm
 - 2014 – 999 mm(est.)

| DTC's Summary of US Production Cutbacks by Region 2012 - 2014 (mm short tons) | | | |
|---|-------------------|-------------|-------------|
| Region | Dec '11 - Dec '12 | 2013 | 2014 YTD |
| Capp | 35.9 | 9.8 | 8.8 |
| Napp | 5.3 | 2.0 | 0.9 |
| ILB | 4.2 | 1.2 | 2.4 |
| PRB | 42.2 | 0.0 | 0.0 |
| Other | 5.1 | 6.6 | 0.3 |
| Total | 92.6 | 19.6 | 12.4 |

Note: Closures, cutbacks and revisions in planned expansions are based on public announcements and DTC estimates. For complete table containing detail on how totals were calculated, please contact Jim Dillon.

| EIA Weekly Production (mm tons) | | | | | | | | |
|--|--------------|--------------|--------------|---------------|--------------|---------------|---------------|---------------|
| | Week Ended | | | Weekly | | Year to Date | | |
| | 5-Jul-14 | 28-Jun-14 | 6-Jul-13 | Seq. Chg | YoY Chg | YTD 2014 | YTD 2013 | % Chg |
| CAPP | 2.15 | 2.63 | 1.96 | -18.39% | 9.84% | 64.00 | 68.53 | -6.61% |
| NAPP | 2.11 | 2.49 | 1.86 | -15.25% | 13.39% | 66.09 | 65.58 | 0.77% |
| Ill Bas | 2.42 | 2.72 | 2.09 | -10.98% | 15.85% | 71.09 | 68.99 | 3.04% |
| CO/UT | 0.80 | 0.96 | 0.76 | -17.15% | 4.52% | 21.06 | 20.41 | 3.14% |
| PRB_(all WY & MT) | 8.13 | 7.90 | 8.83 | 2.88% | -7.93% | 215.65 | 212.82 | 1.33% |
| East US | 7.13 | 8.34 | 6.38 | -14.59% | 11.65% | 213.95 | 215.81 | -0.86% |
| West US | 10.97 | 11.01 | 11.57 | -0.37% | -5.17% | 286.63 | 286.54 | 0.03% |
| Total US | 18.09 | 19.35 | 17.95 | -6.50% | 0.81% | 500.58 | 502.35 | -0.35% |

Source: EIA, DTC Research

Coal Company Liquidity

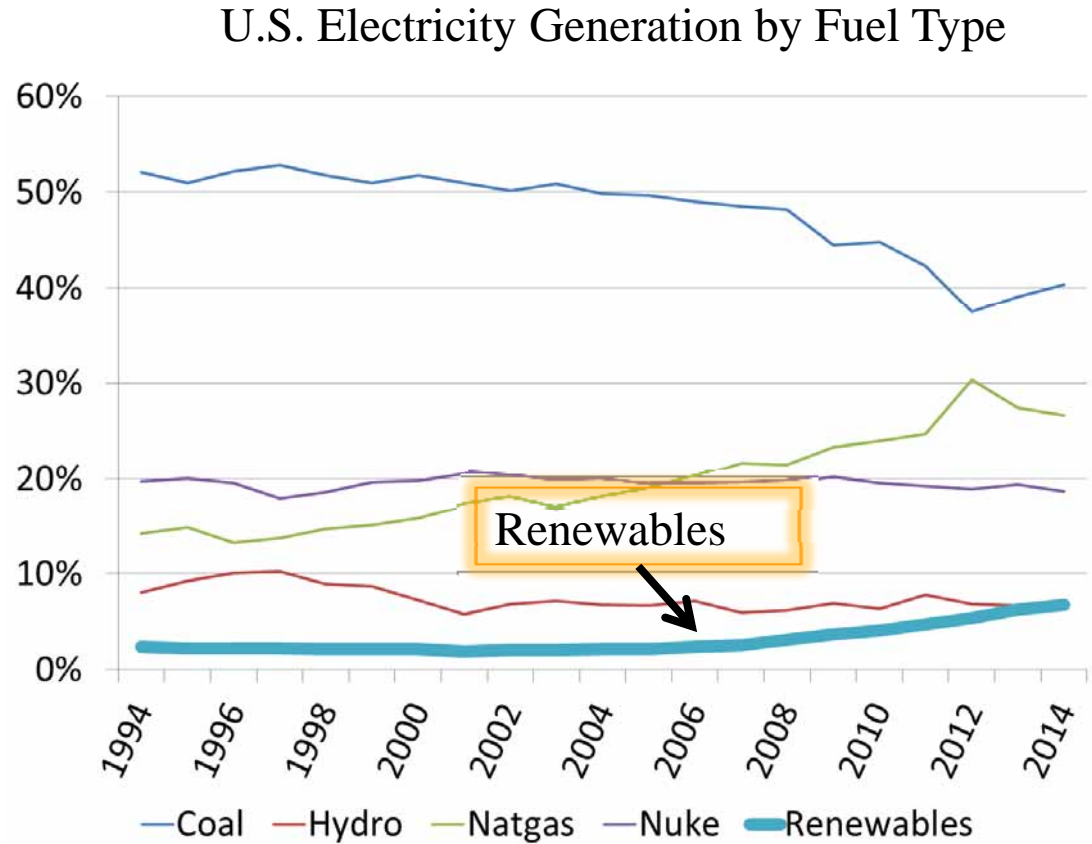
- Good news: There is plenty of liquidity
 - ARLP - \$0.48 billion
 - BTU - \$2.1 billion
 - ANR – \$2.1 billion
 - WLT - \$0.68 billion
 - ACI – \$1.4 billion
 - WLB - \$0.1 billion
 - CLF – \$1.9 billion
 - CHK - \$5.0 billion
 - CLD - \$0.75 billion
 - CNX - \$2.1 billion

- Bad news: There is plenty of liquidity

Demand Threats

Renewable Power

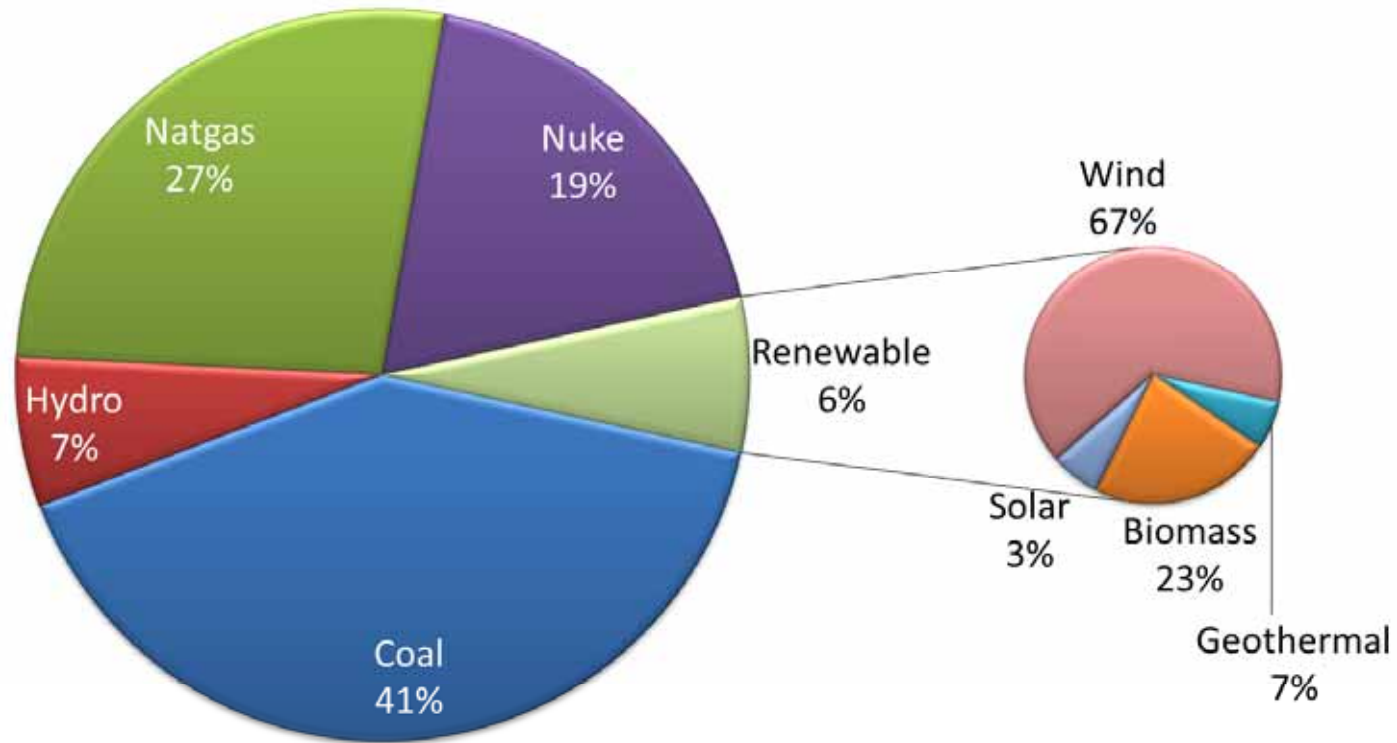
- Renewables have plenty of favorable press, but little to show for it
- Overall, renewables account for 6% of electricity generation in the U.S.
- High costs (without subsidies), poor reliability, lack of infrastructure, distance from population centers have kept renewable generation in check



Source: EIA, DTC Research

Renewables Dominated by Wind

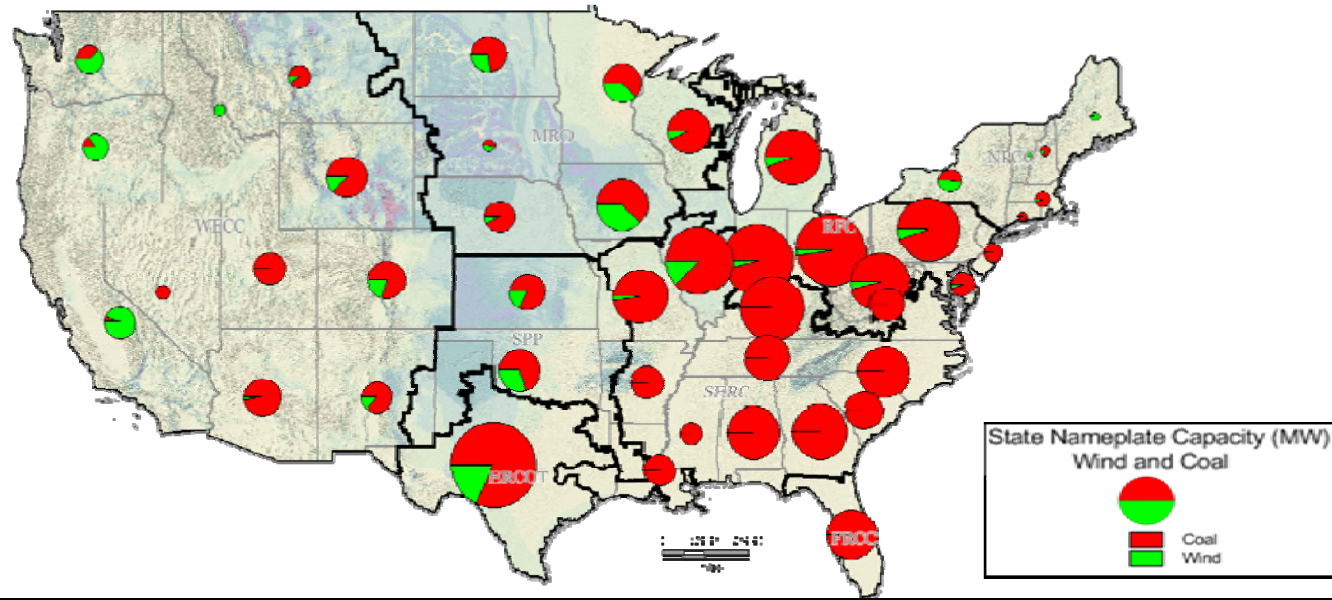
2013 U.S. Electricity Generation



Source: EIA, DTC Research

- Wind is the dominant renewable source at less than 4% of total generation
- Wind has greater impact on coal when gas prices are low

Coal Displacement by Wind



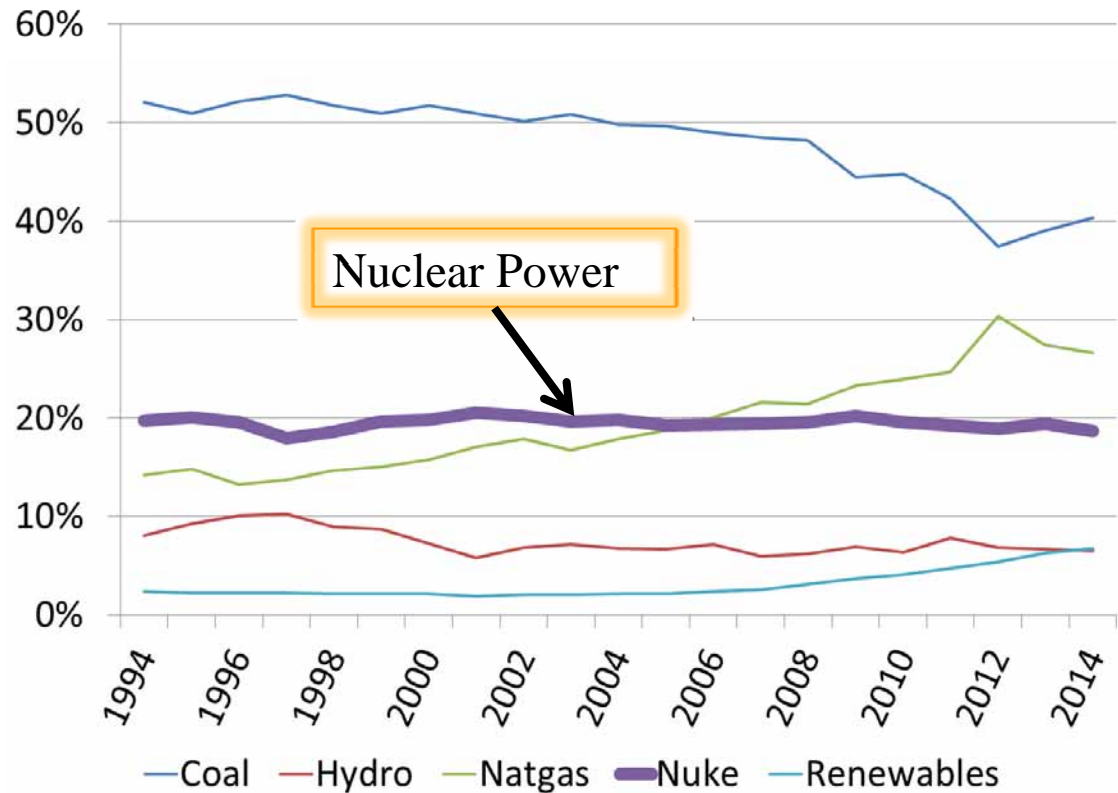
| Potential Displacement of Coal by Wind | | | | | | | | | |
|--|------------------|------------------|------------------|-------------------|------------------|-------------------|------------------|------------------|-------------------|
| | Capp | ILB | Napp | SPRB | ROCK | GLIG | NLIG | Other | Grand Total |
| MRO | - | 71,000 | 21,000 | 10,587,000 | 20,000 | - | 5,095,000 | 720,000 | 16,515,000 |
| NPCC | 414,000 | 197,000 | 470,000 | 599,000 | - | - | - | 78,000 | 1,758,000 |
| RFC | 505,000 | 1,353,000 | 2,608,000 | 2,067,000 | 7,000 | - | - | 137,000 | 6,678,000 |
| SERC | 389,000 | 493,000 | 74,000 | 1,541,000 | 70,000 | 53,000 | - | 108,000 | 2,728,000 |
| SPP | - | 33,000 | 4,000 | 7,111,000 | 1,000 | 989,000 | - | 102,000 | 8,239,000 |
| TRE | - | - | - | 8,015,000 | - | 9,449,000 | - | 91,000 | 17,555,000 |
| WECC | - | - | - | 6,039,000 | 3,110,000 | - | - | 7,155,000 | 16,304,000 |
| Grand Total | 1,308,000 | 2,146,000 | 3,177,000 | 35,960,000 | 3,208,000 | 10,491,000 | 5,095,000 | 8,391,000 | 69,776,000 |

Source: EIA, FERC, DTC Mapping

Nuclear Power

- Nuclear power has remained static at 20%
- Half of the U.S. fleet is over 30 years old
- Kewaunee, Crystal River, San Onofre retired
- Vermont Yankee, Oyster Creek retiring
- Others being evaluated
- Fukushima and cheap gas has killed any chance of a nuclear resurgence
 - Germany will eliminate nukes by 2022
 - 80% of Japanese favor a phase out of nukes

U.S. Electricity Generation by Fuel Type

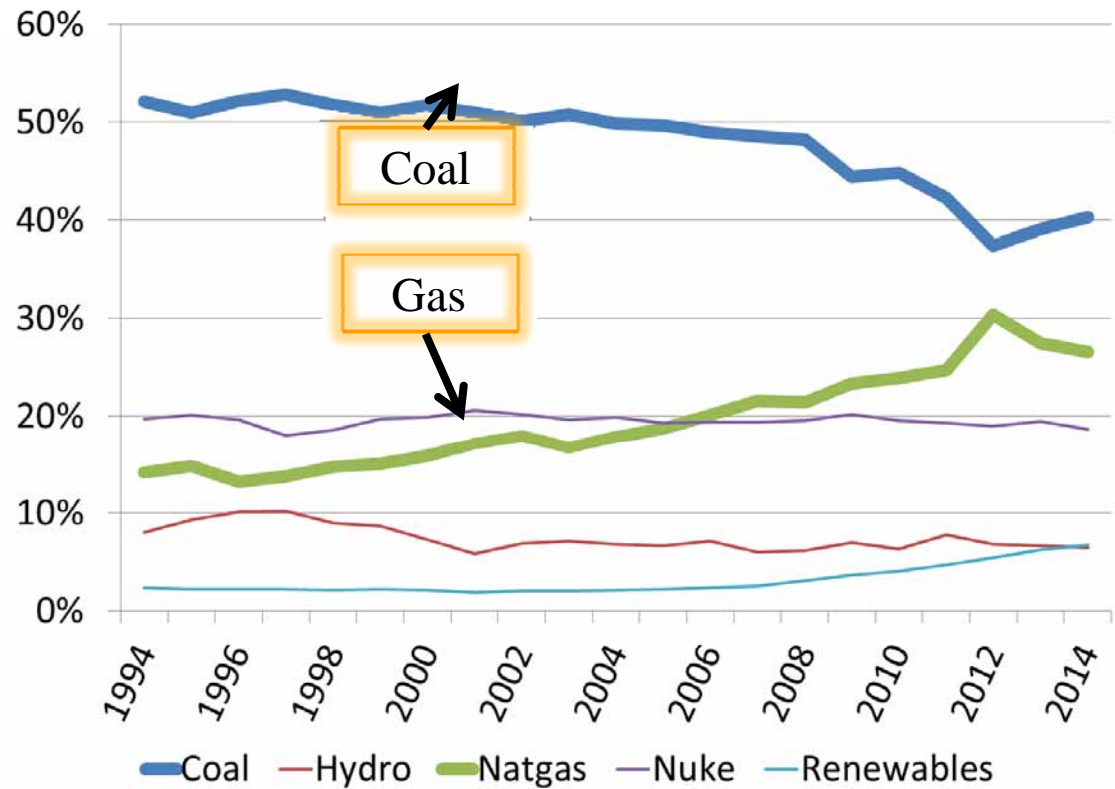


Source: EIA

Gas and Coal Generation

- Gas and coal generation are diametrically linked
- The rise in gas has come directly at the expense of coal
- Similarly, a decline in gas will likely come at the benefit of coal

U.S. Electricity Generation by Fuel Type

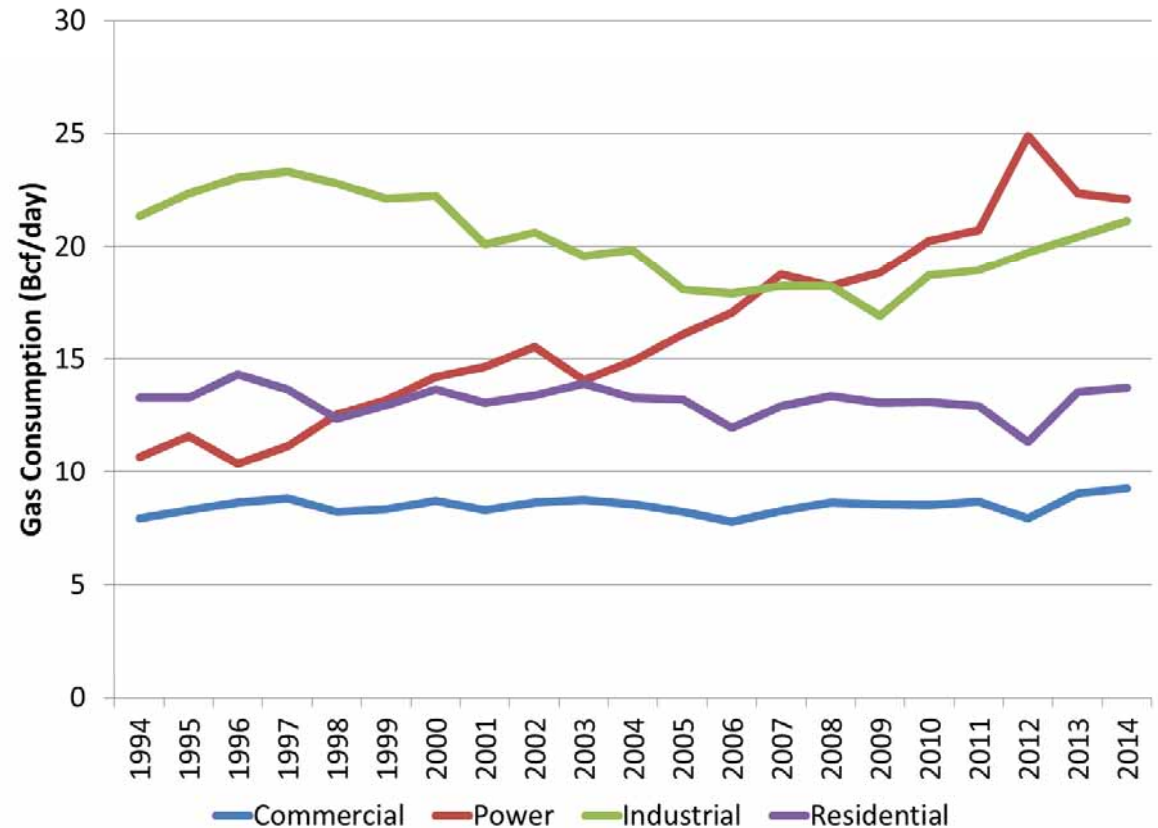


Source: EIA

Increased Gas Going to Power

- Excess gas supply forced into power generation
 - Residential and commercial are flat
 - Industrial demand fell in recession; rising again as industry slowly finds uses for cheap gas
- In last ten years:
 - Power use up 48%
 - Industrial use up 0.9%
 - Commercial use up 2.8%
 - Residential use *down* 0.6%

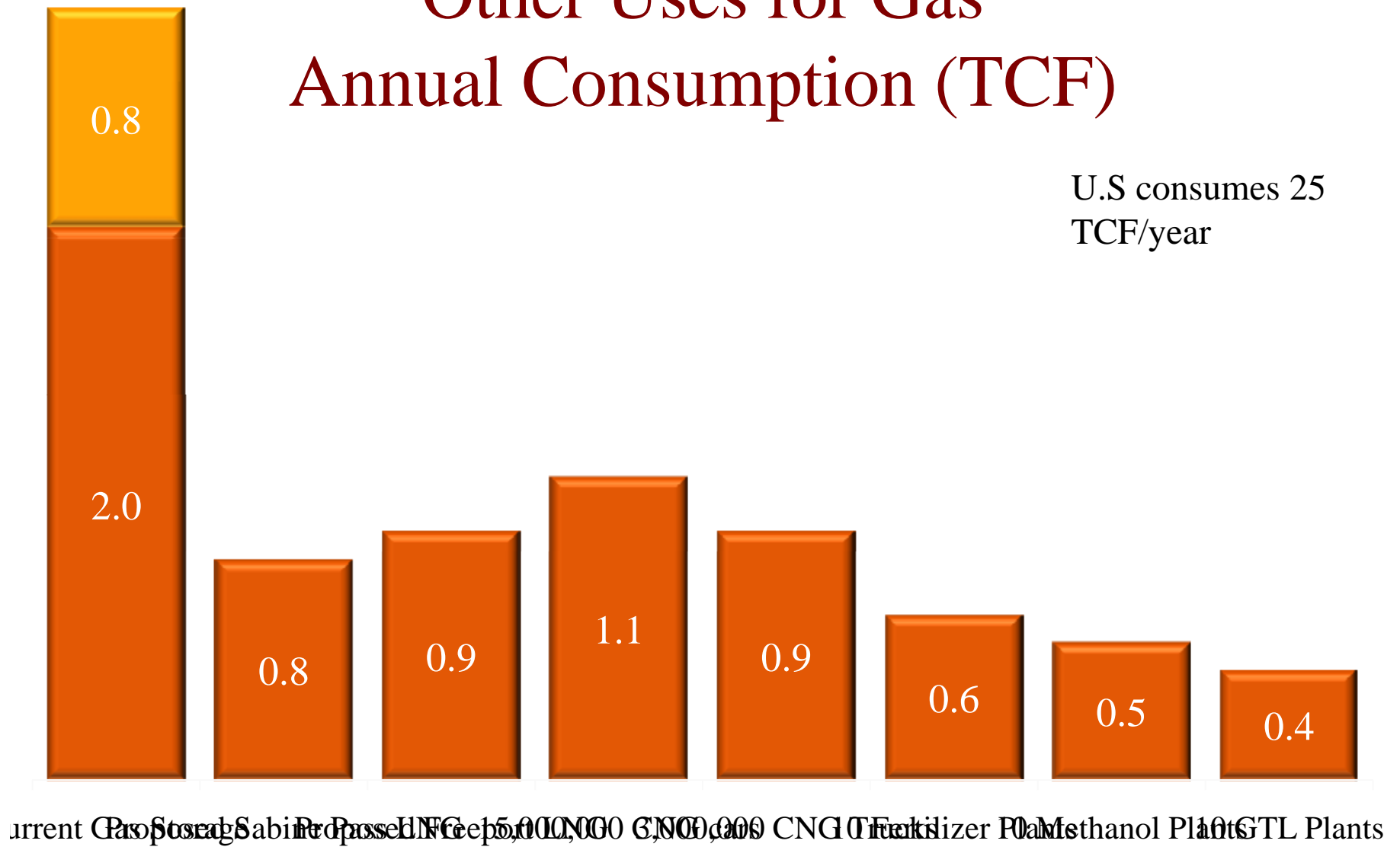
U.S. Gas Consumption by Sector



Source: EIA

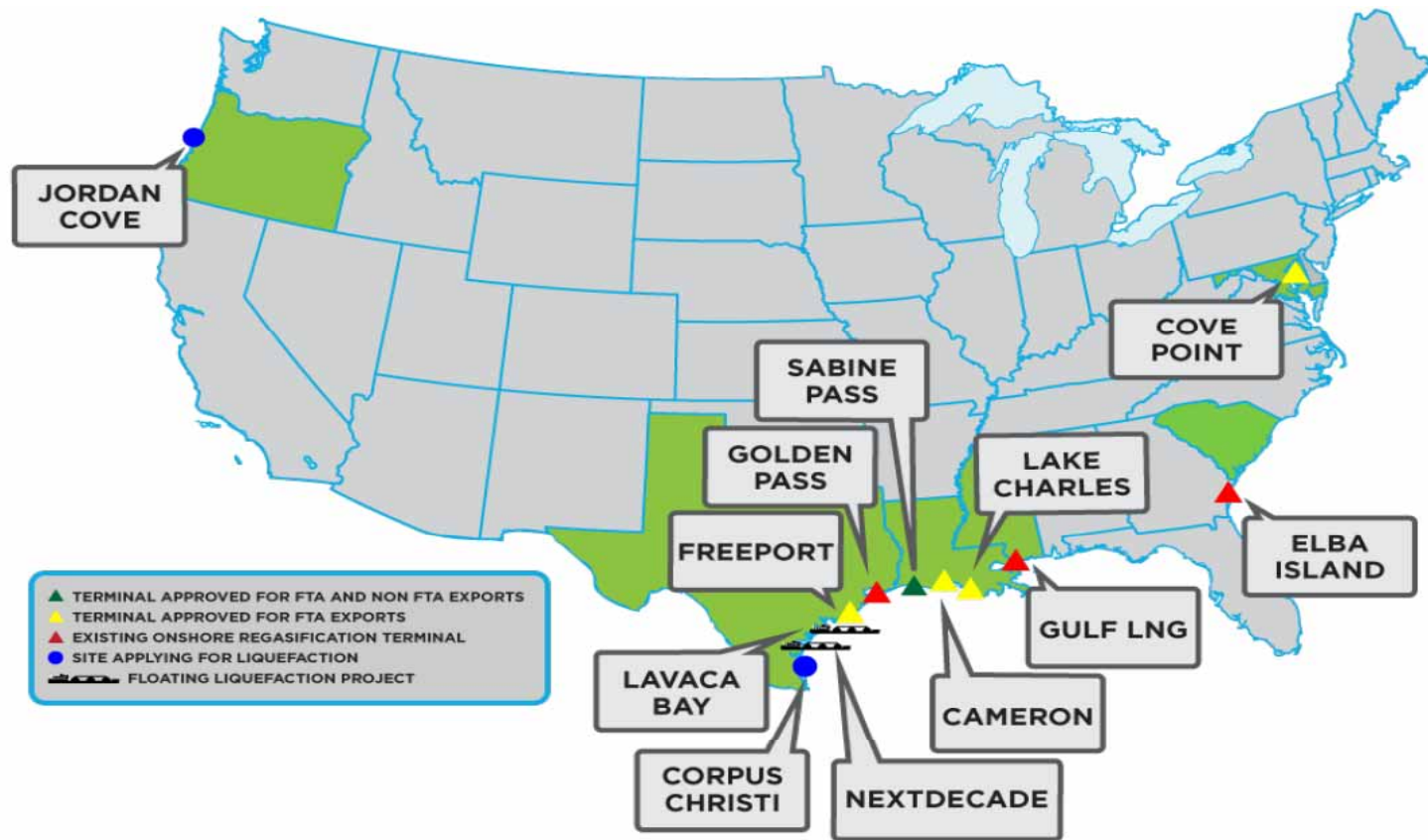
Other Uses for Gas Annual Consumption (TCF)

U.S consumes 25
TCF/year



Source: EIA, BP, DTC Research

LNG Export Opportunities

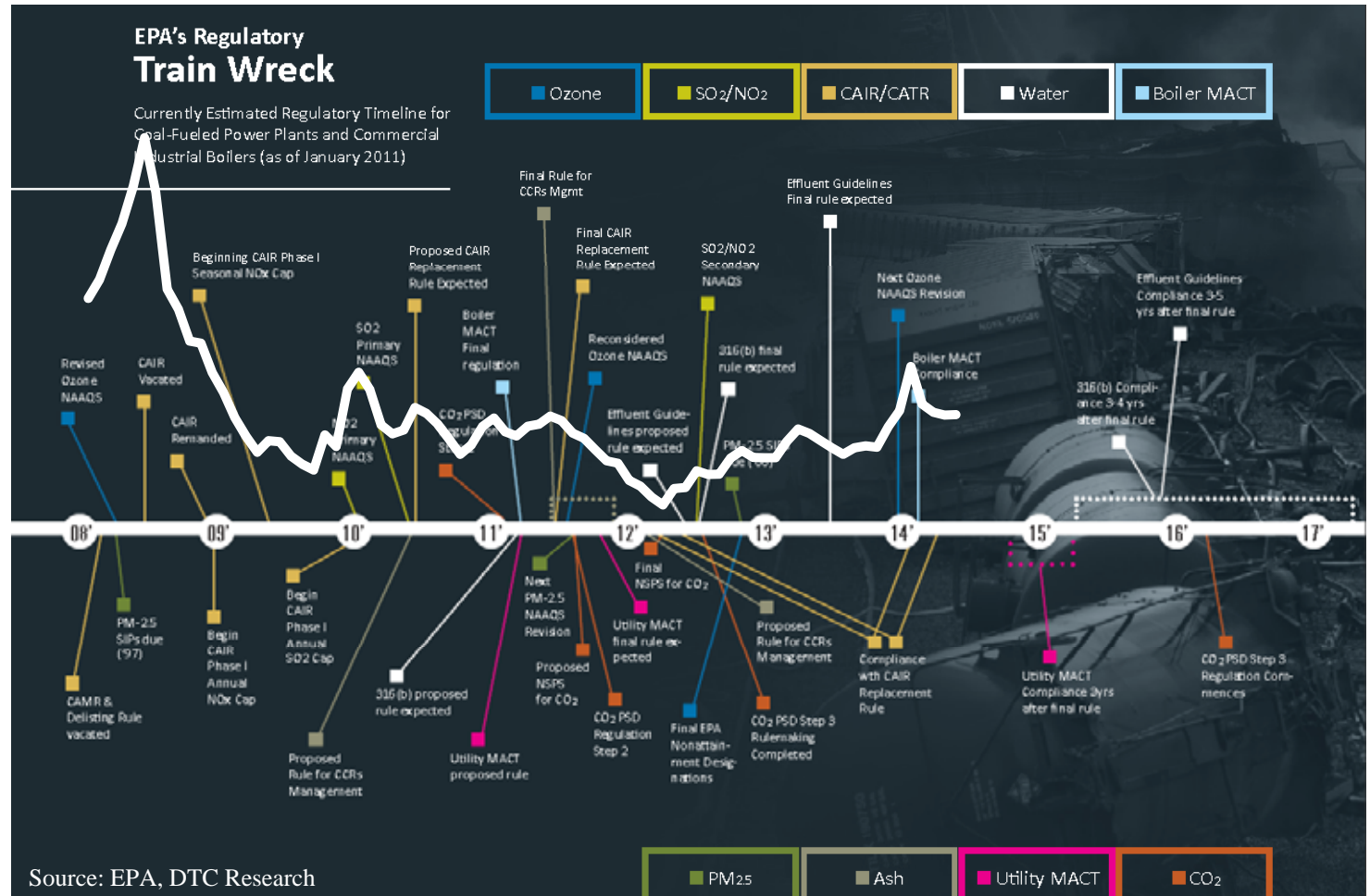


Sabine - 2.2 Bcf/d Freeport - 2.5 Bcf/d Lake Charles - 2.0 Bcf/d
Cameron - 1.6 Bcf/d Cove Point - 1.0 Bcf/d

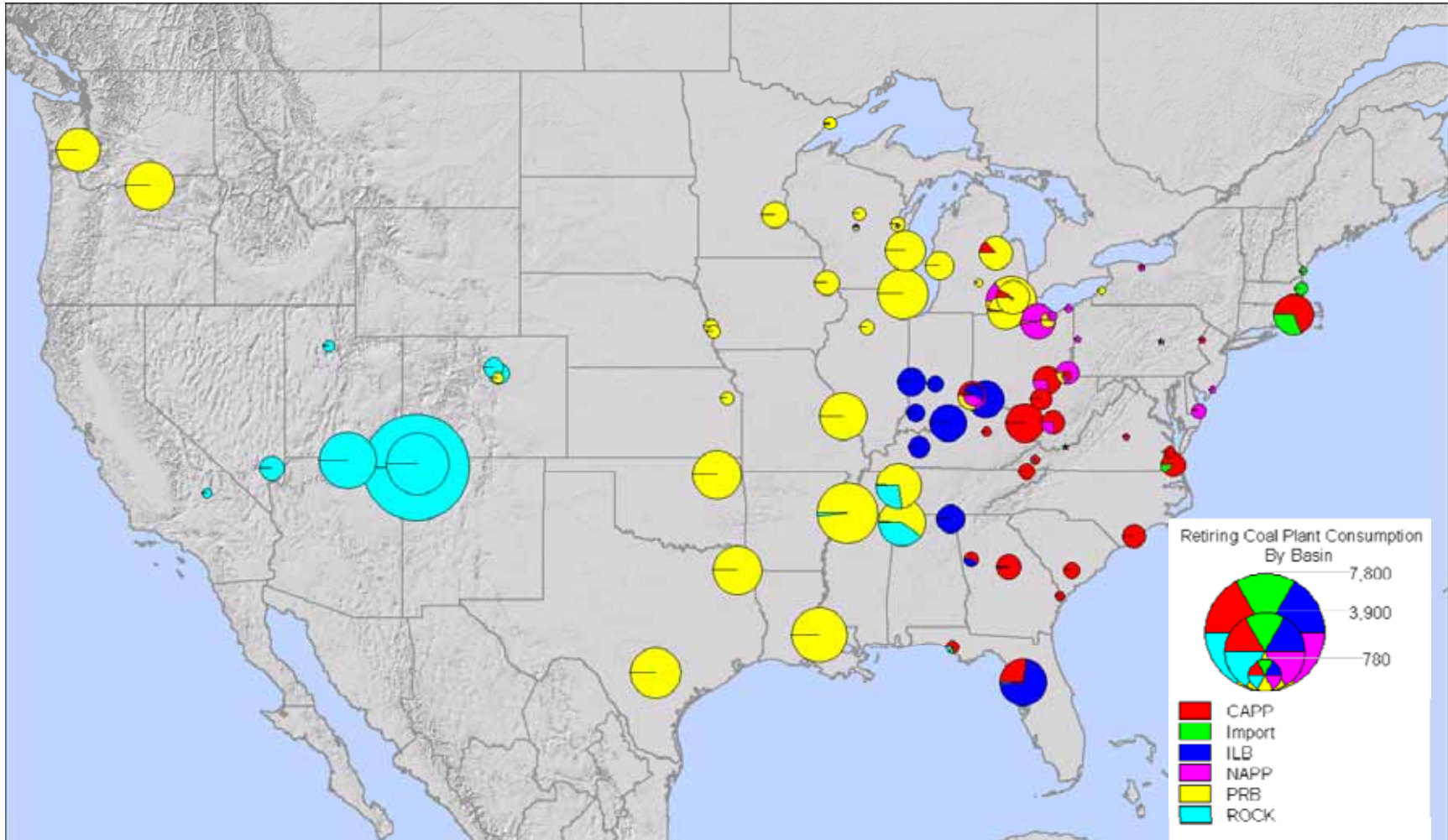
Environmental Regulations

- Falling gas prices have masked rising costs associated with recently-imposed coal mining and coal consumption regulations

- Conductivity
- 316(b)
- Ash
- CSAPR
- MATS
- Carbon
- Selenium
- Mercury
- MACT




Planned Retirements by 2020

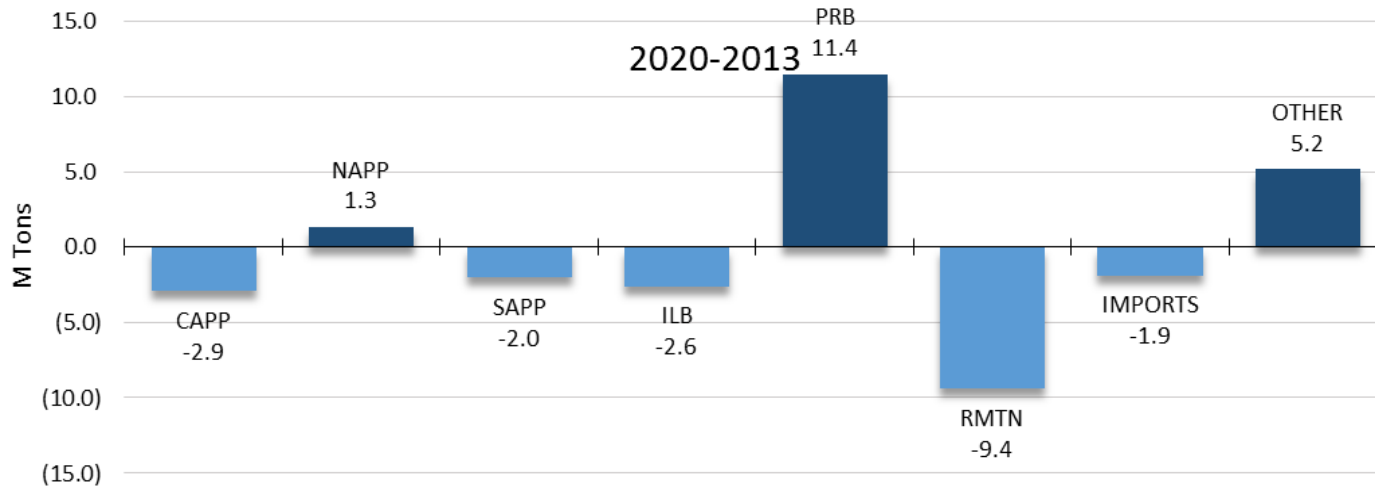


Source: DTC Mapping

Predatory Pricing

- Natural Gas – The **Walmart**  of Energy?
 - Predatory pricing is hard to prove in commerce, but it's impact is easy to see
 - A period of low prices knocks out competition
 - Once competitors are gone, prices rise again
 - Low gas prices now, higher prices to come as more uses for gas emerge
 - Regulations are permanently knocking out coal plants
 - Will “Polar Vortex” be enough of a warning?
 - How soon before gas prices rise?

Net Basin Impact of Retirements

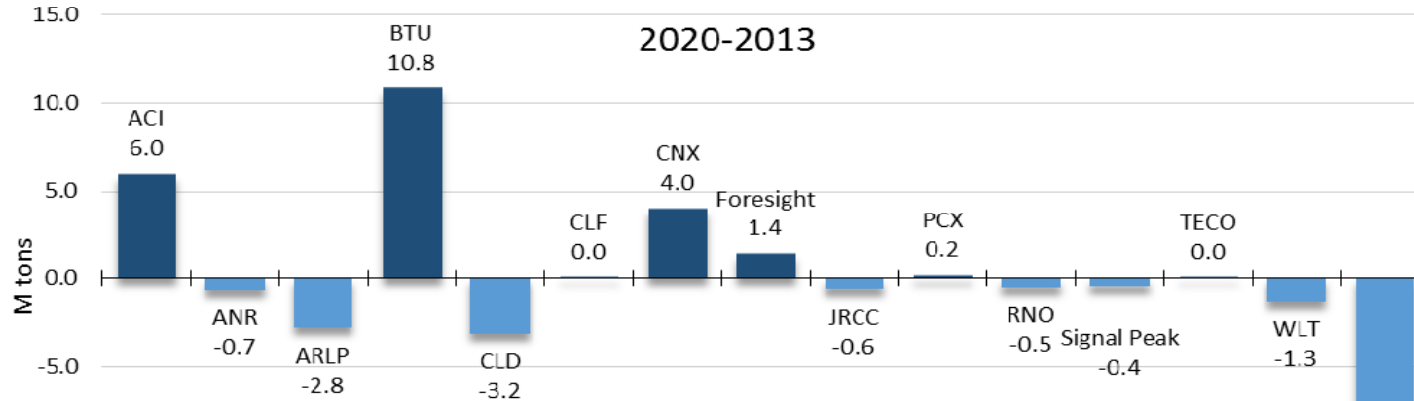


Potential Coal Shipments to All Electric Generating Units by YoY change (000 tons)

| Basin | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020-2013 |
|--------------|---------------|-----------------|---------------|----------|----------------|----------------|----------------|--------------|
| CAPP | 2,784 | -5,167 | 852 | 173 | -562 | -554 | -426 | -2,899 |
| NAPP | 2,642 | -3,716 | 2,557 | 1,222 | -264 | 1,703 | -569 | 1,315 |
| SAPP | -1,353 | -338 | -339 | 92 | -6 | -28 | -31 | -2,003 |
| ILB | 3,755 | -6,210 | 2,963 | -898 | -474 | -883 | -816 | -2,563 |
| PRB | 30,241 | -17,193 | 699 | 4,420 | -837 | -2,959 | -2,941 | 11,430 |
| RMTN | -2,494 | -1,595 | 2,867 | -5,210 | -2,834 | -62 | -75 | -9,403 |
| IMPORTS | -1,177 | -277 | -123 | -277 | 59 | 4 | -64 | -1,854 |
| OTHER | 4,801 | -505 | 524 | 479 | 117 | -161 | -79 | 5,177 |
| Total | 39,200 | (35,000) | 10,000 | 0 | (4,801) | (5,199) | (5,001) | (800) |

Source: DTC Research, Ventyx

Net Miner Impact of Retirements



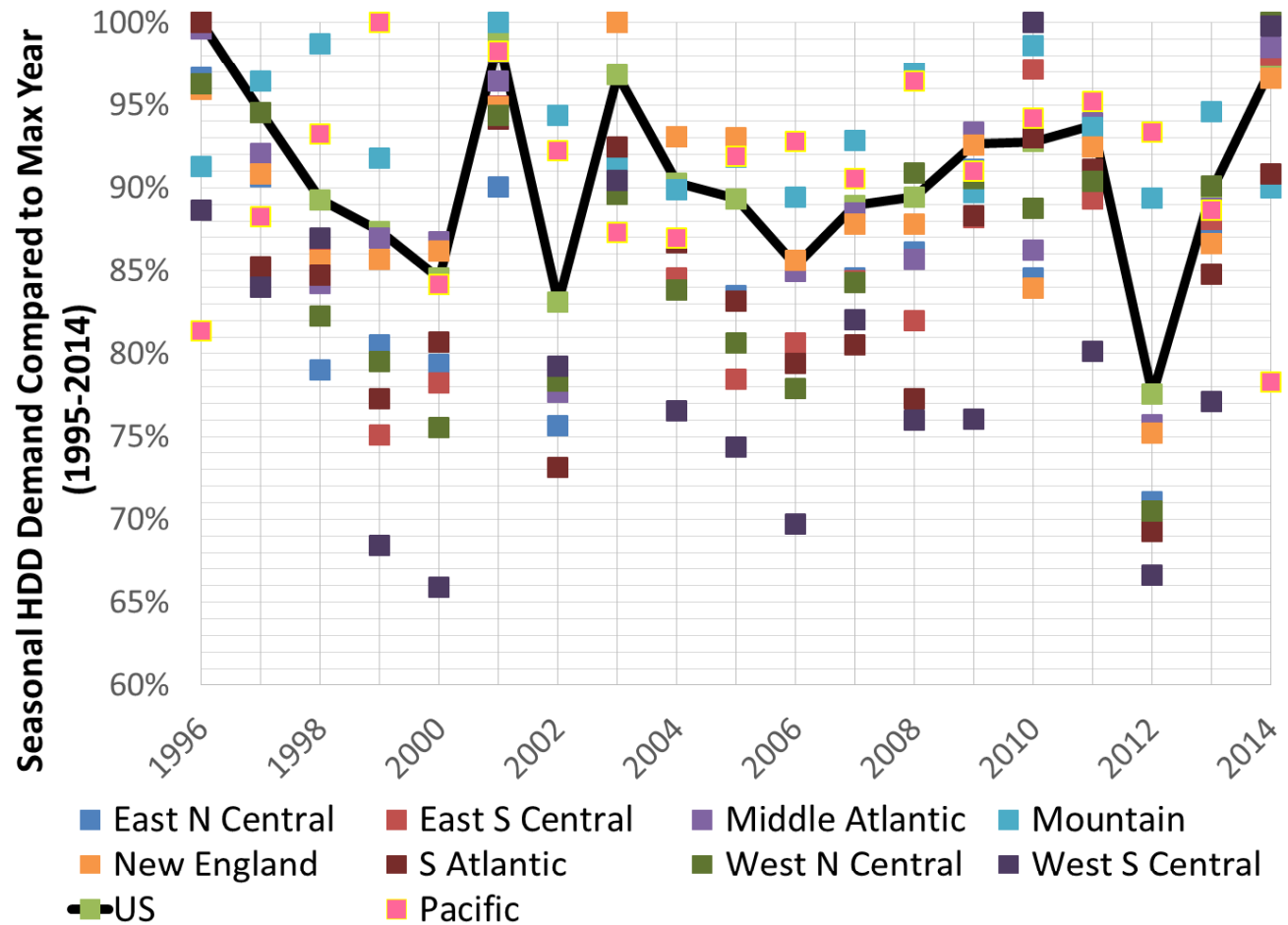
Potential Coal Shipments to All Electric Generating Units by YoY change (000 tons)

| Mine Owner | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020-2013 |
|--------------|---------------|-----------------|---------------|----------|----------------|----------------|----------------|--------------|
| ACI | 13,093 | -5,530 | 3,954 | -2,600 | -1,342 | -1,129 | -481 | 5,965 |
| ANR | 3,014 | -3,497 | 448 | 805 | 376 | -655 | -1,183 | -692 |
| ARLP | 721 | -1,874 | 292 | -1,085 | -349 | -310 | -216 | -2,820 |
| BTU | 15,152 | -7,697 | 3,156 | 2,229 | -6 | -1,096 | -914 | 10,824 |
| CLD | 1,507 | -2,929 | 236 | 358 | -1,002 | -632 | -707 | -3,170 |
| CLF | 58 | -13 | 7 | 5 | -3 | -4 | -4 | 46 |
| CNX | 4,666 | -2,052 | 1,356 | 733 | -108 | -279 | -298 | 4,018 |
| Foresight | 1,494 | -1,278 | 810 | 602 | 30 | -119 | -142 | 1,397 |
| JRCC | 79 | -785 | 77 | 90 | -12 | -42 | -52 | -644 |
| PCX | 357 | -531 | 227 | 220 | 15 | -76 | -55 | 157 |
| RNO | 291 | 52 | -88 | -538 | -212 | -13 | -13 | -520 |
| Signal_Peak | 37 | -138 | -329 | -16 | 0 | 0 | 0 | -446 |
| TECO | 162 | -254 | 123 | 49 | -9 | -22 | -23 | 26 |
| WLT | -723 | -451 | -176 | 63 | -6 | -21 | -23 | -1,338 |
| Other | -707 | -8,022 | -95 | -916 | -2,175 | -799 | -889 | -13,603 |
| Total | 39,200 | (35,000) | 10,000 | 0 | (4,801) | (5,199) | (5,001) | (800) |

Source: DTC Research, Ventyx

Polar Vortex or Media Hype?

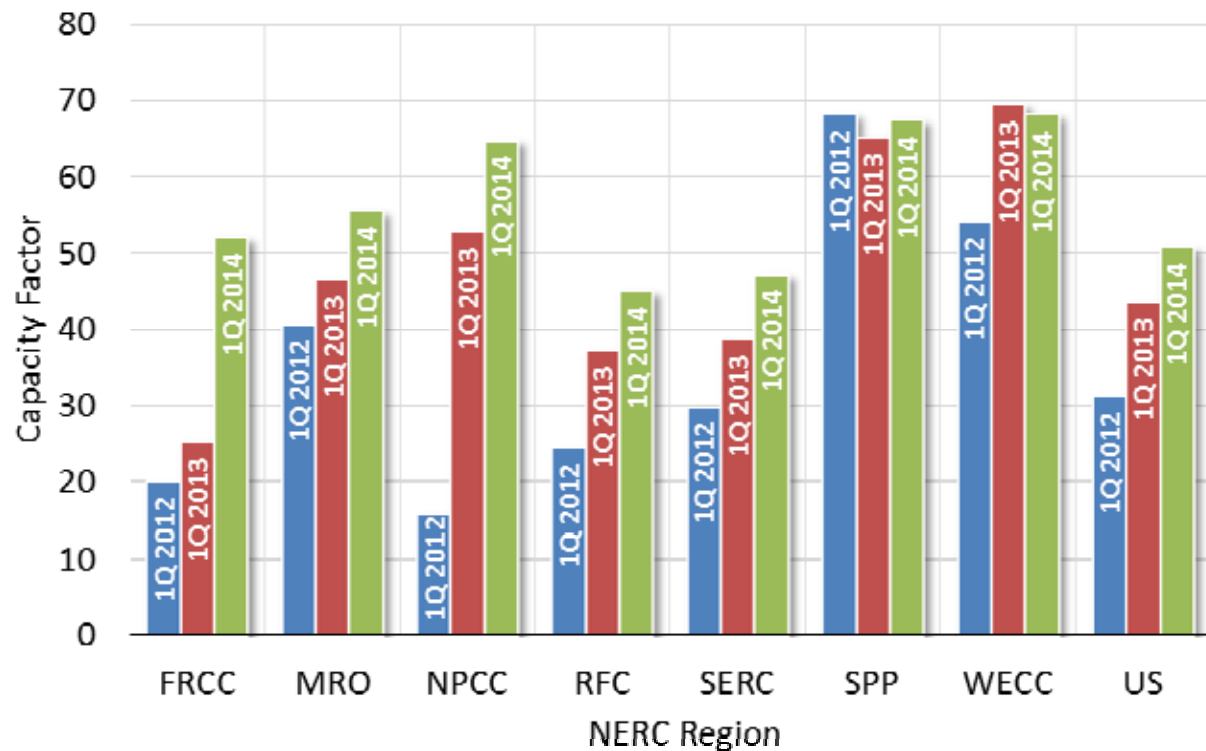
- In last 20 years, two winters were colder
- In last 20 years, seven winters were within 5% of 2014 HDDs
- Pacific and Mountain regions were warmer than normal



Coal-fired Generation Is Critical

- Capacity factor for units retiring by 2020 was:
 - 31.2% in 1Q12
 - 43.6% in 1Q13
 - 50.8% in 1Q14
- WECC and SPP capacity factor decreased in 2014, albeit from already-high levels
- NPCC and RFC capacity factors jumped from 15.7% and 24.3% in 1Q12 to 64.8% and 45.1%, respectively

Capacity Factor of Units Scheduled to Retire by 2020



Conclusion

- Supply-side threats
 - Cuts at high-cost mines makes mining costs look better than actual
 - Coalco liquidity is extending the pain
- Demand-side threats
 - Forced retirements will be painful to industry and consumers
 - Cold winter exposed need for diversity because we will have many more winters that are at least as cold as the winter of '13/'14
 - Gas is primary threat to coal
 - Low gas prices create environment for more regulations
 - Current gas markets have similarities to predatory pricing tactics seen in other businesses