

The logo for Wisconsin Manufacturers & Commerce (WMC) is located in the top left corner. It features the letters "WMC" in a large, white, serif font, set against a blue oval background with a white border. Below the oval, the text "WISCONSIN MANUFACTURERS & COMMERCE" is written in a smaller, white, sans-serif font.

WMC

WISCONSIN MANUFACTURERS
& COMMERCE

Natural Gas Price Risk: Potential Impacts of Environmental Regulation and Activism

Thursday, November 20th, 2014

Sheraton Madison Hotel | 706 John Nolen Dr.

The background of the slide is a photograph of several birch trees with their characteristic white bark and green foliage, viewed from a low angle looking up. A large, white, curved graphic element separates the text from the bottom portion of the image.

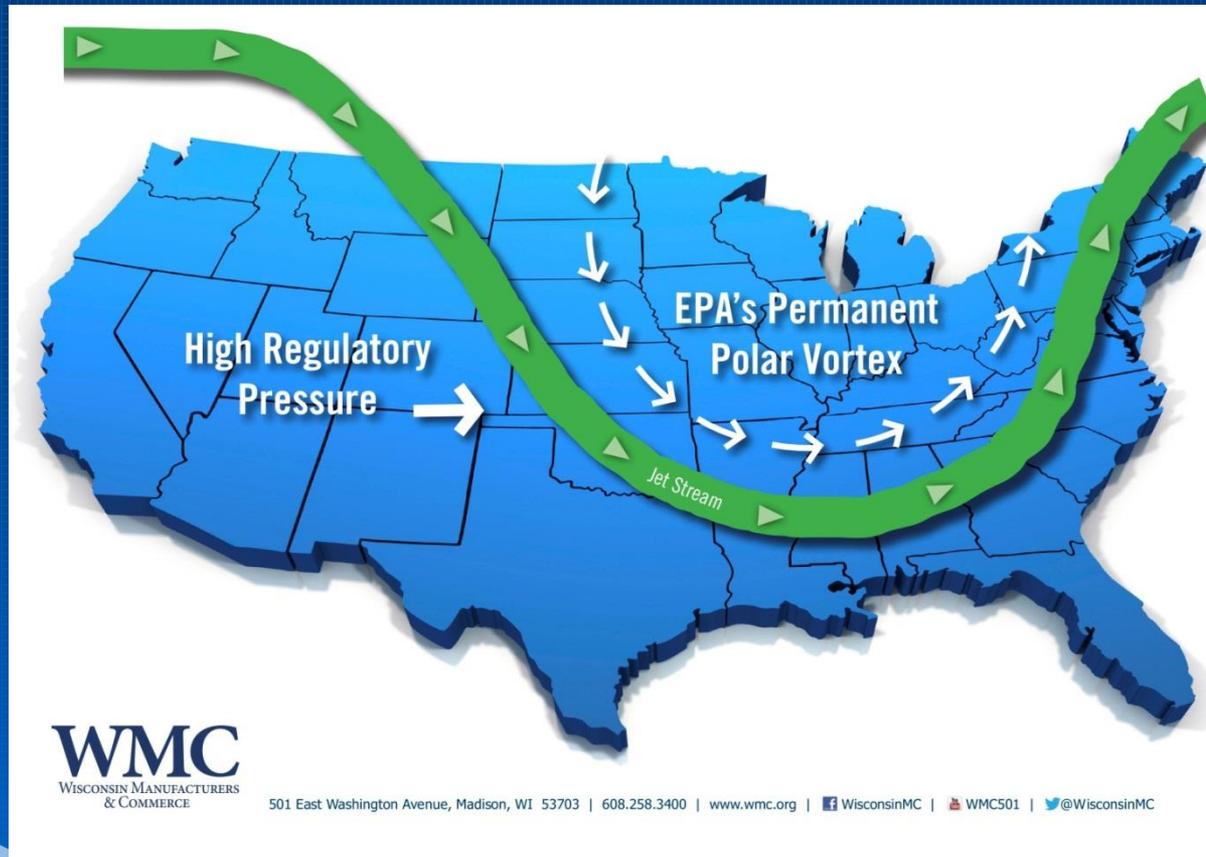
The Industrial Renaissance is Real

- PricewaterhouseCoopers – By 2025:
 - U.S. Manufacturers will save \$11.6 billion on inputs and add 1 million jobs
- American Chemistry Council:
 - \$16 billion in new chemical facilities through 2019
- Onshoring trend continuing:
 - Chemicals
 - Plastics
 - Fertilizer

Unless we Screw it Up

- Real Threats to Deliverability Exist
 - EPA
- Real Threats to Supply Exist
 - EPA
 - Environmental Activism
 - Volatility
- We will overcome these threats but we must be engaged and vigilant

EPA's Permanent Polar Vortex



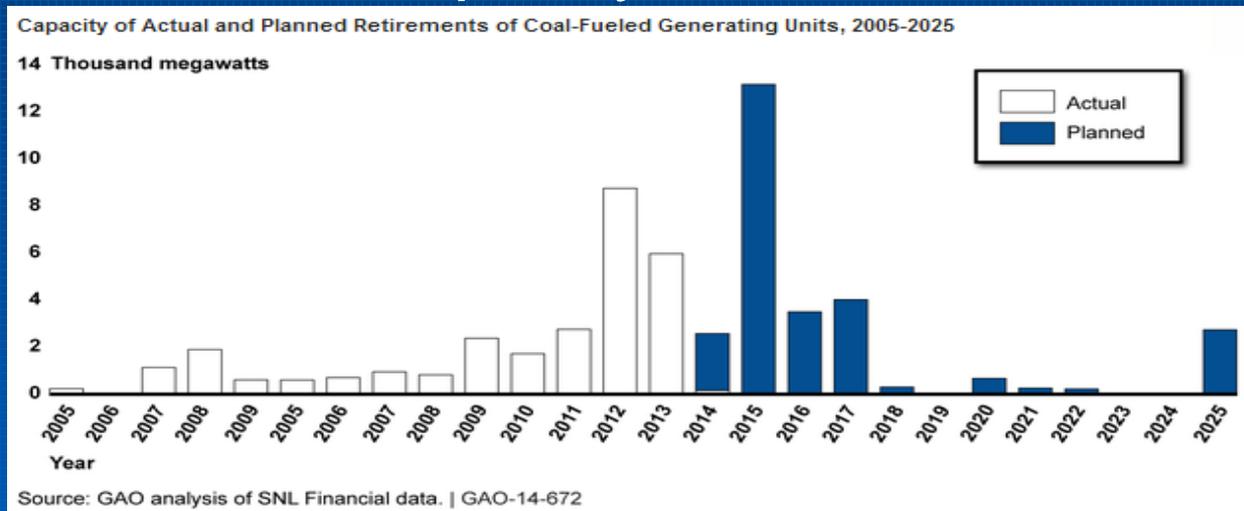
- EPA is Rapidly Altering Energy Markets
- What Impact will EPA Policies have on Reliability and Price?

The Alphabet Soup Keeps Cooking

- Utility MATs
- CSAPR
- Cooling Water Intakes
- Coal Ash (expected in Dec.)
 - All Driving Coal Retirements
- Boiler MACT
 - Driving Fuel Switching

Estimated Coal Retirements

- GAO Estimate: 42 GW through 2025
– 13% of Capacity



- AEA: 72.7 GW
- FERC: 81 GW “very likely” or “likely”

Clean Power Plan (111d)

- MISO
 - Expect 16 GW of Retirements in Territory
- Wisconsin Utility Joint Comments
 - 24% more gas needed to comply in WI
 - Additional infrastructure likely needed
- NERA Economic Consulting
 - Just a 2% hike in gas prices but...
 - If EE and Renewables Building Blocks fail...
 - 169 GW Retirements
 - 29% Hike in Natural Gas Prices

But it Gets Worse

- On Dec. 1st EPA will lower the Ozone NAAQS to 60-70ppb
 - 60ppb = total nonattainment
 - NAM: Industrial natural gas costs to increase by 12%
 - If gas production is constrained after 2020:
 - Price hike could hit **52%**
 - 101 GW Coal to Retire (34% of 2017 capacity)

Gas is Next

“When that is done, and the stake is through the heart of coal, they will come for you next.” – Democratic US Senator Heidi Heitkamp



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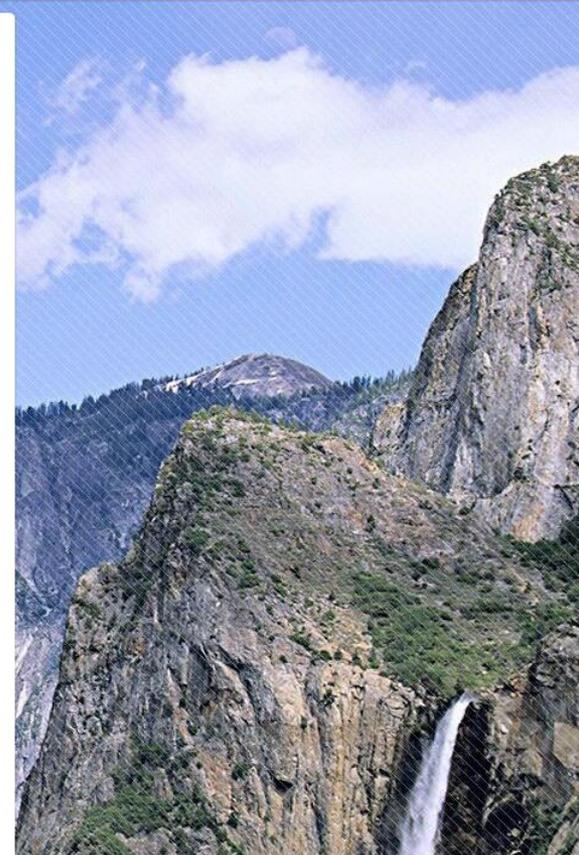
Following

United Shale Awareness flew this plane over astroturf pro-drilling rally in PA Tuesday: Shale gas = dirty energy!
pic.twitter.com/iRWkdBusGN

Reply Retweet Favorite More



RETWEETS 11 FAVORITES 5



Expect a battle on every front

- Pipeline Protests
- State/Local Moratoria on Fracking and Sand Mining
- EPA to target methane at fracking sites



Conclusions

- EPA rules will continue to distort markets and increase demand
 - Will our infrastructure be able to accommodate the rapidity of that growth?
- Reduced fuel diversity will increase vulnerability to externalities
 - By how much is unknown
- Threats to supply are serious but growth should continue despite opposition so long as industry remains united and engaged politically



Thank you!



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