

Impacts of EPA Clean Air Regulations on Coal and Electricity

Governor's Energy Summit

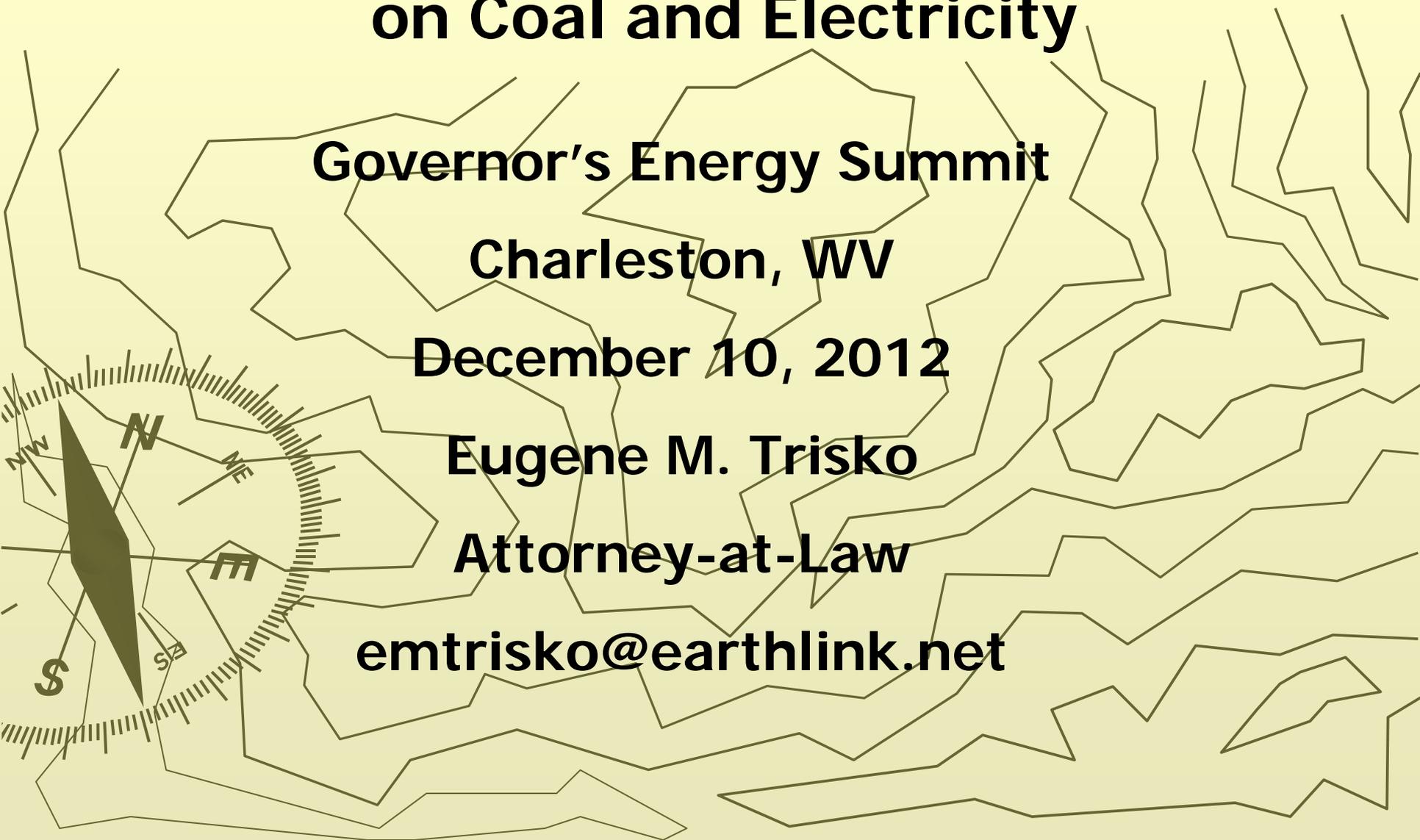
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Focus issues

- Recent EPA MATS regulations will shut down hundreds of coal units with unprecedented loss of jobs.
- EPA's GHG NSPS for CO₂ will prevent the construction of any new coal plants unless changed by EPA, the courts, or Congress.
- "All of the above" must include coal.

Estimates of MATS impacts

- Mercury and air toxics standards will induce hundreds of coal unit closures 2015-16.
- Most affected units are <400 MW and older than 40 years, without scrubbers.
- 215,000 direct and indirect job losses, net of new jobs created (NERA/ACCCE).

PJM closure survey: 18 GW, most in 2015 when MACT takes effect

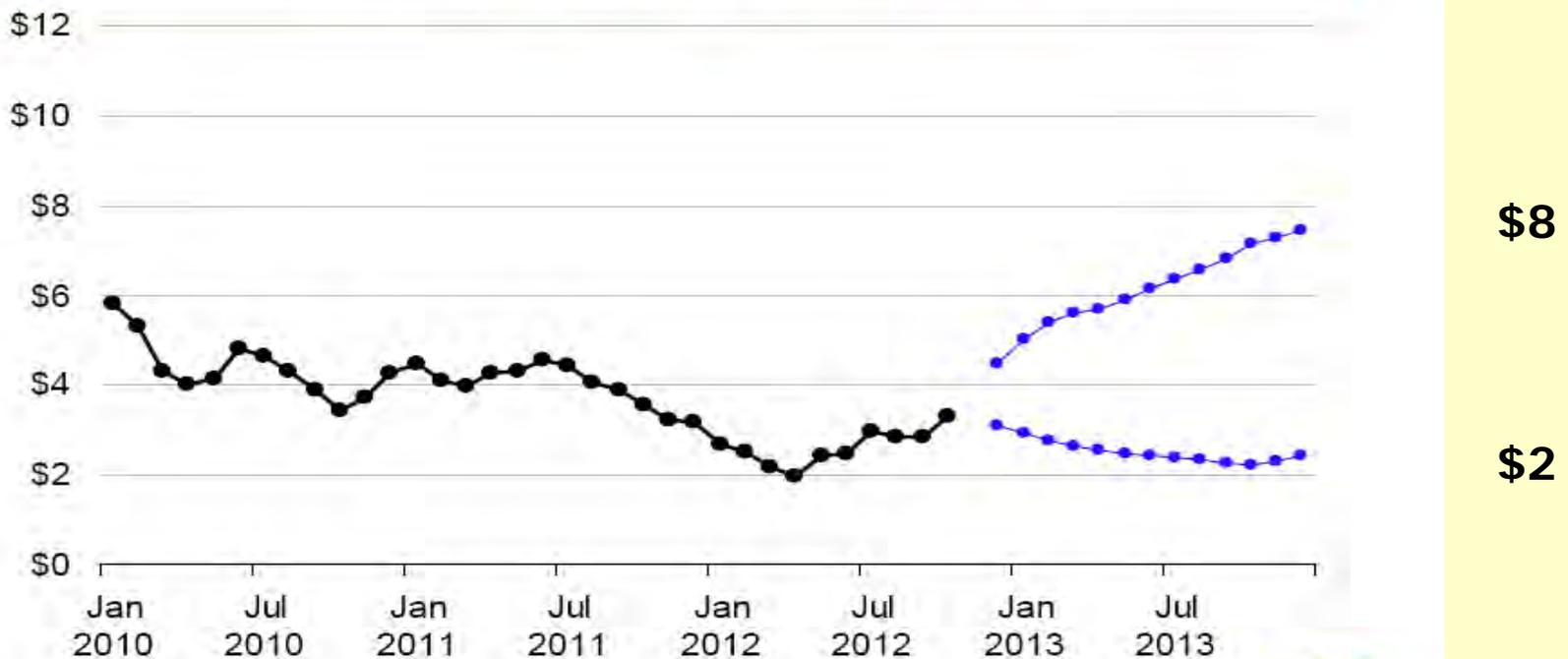


Source: PJM.

A word about natural gas

DOE/EIA NYMEX gas futures 95% confidence limits to December 2013

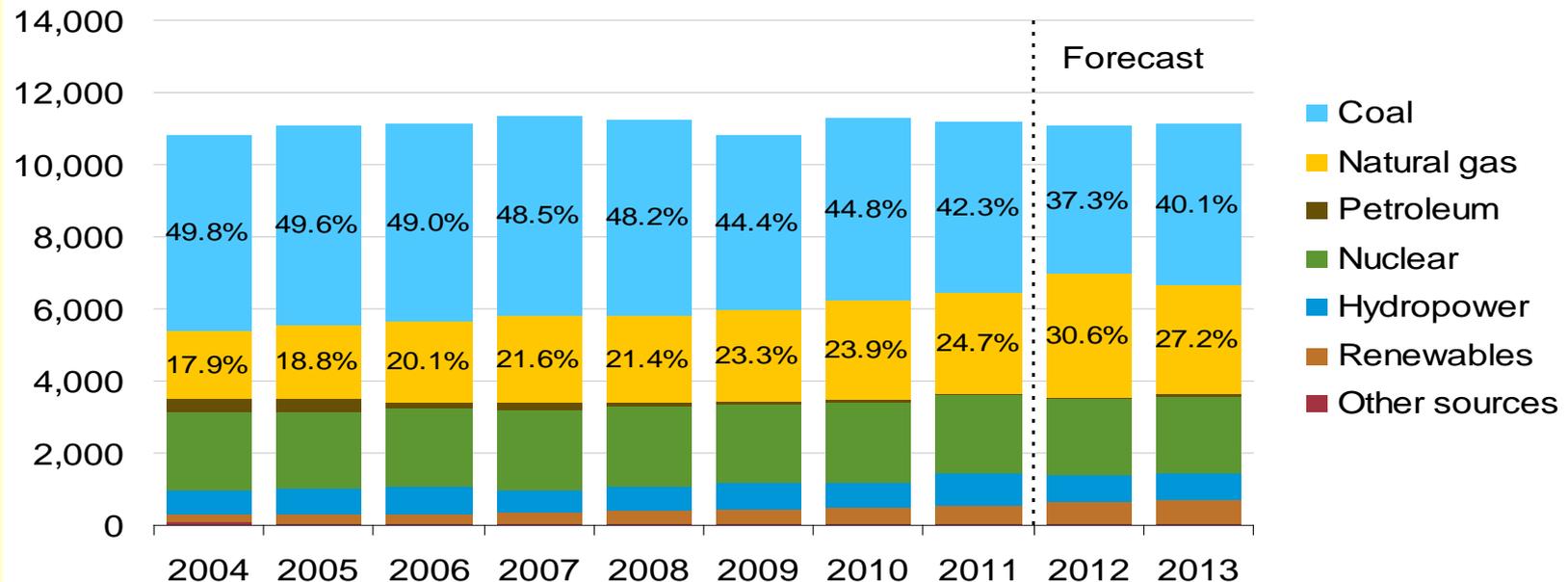
Past Henry Hub Price and 95% NYMEX Confidence Interval, November 2012



DOE projects increased coal burn in 2013: +50 MMTPY

U.S. Electricity Generation by Fuel, All Sectors

thousand megawatthours per day



Note: Labels show percentage share of total generation provided by coal and natural gas.

Source: Short-Term Energy Outlook, November 2012



The litigation front

- EPA granted reconsideration requests on July 20, 2012 for new source mercury, acid gas and PM2.5 limits.
- Revised MATS new source limits proposed November 2012.
- Rulemaking to be completed by March 2013.
- Court of Appeals vacated Cross State Air Pollution Rule in August 2012 – EPA appeal pending.

NSPS GHG Rule

- EPA proposed new source standard rule for CO₂ emissions in April 2012.
- Coal and NGCC units are both subject to 1,000 lb/MWH CO₂ standard.
- For the first time in 40 years, EPA combined steam electric generation units with natural gas combined cycle (NGCC) units in one category.
- EPA concludes the “Best System of Emission Reduction” for the combined category is NGCC.
- Final rule December 2012.

NSPS precludes new coal

- Rule requires new coal units to adopt CCS over 30-year life, meeting average of 1,000 lbs/MWH.
- NGCC units can meet 1,000 lb/MWH CO₂ standard with no controls.
- New supercritical BIT coal units emit ~2,000 lbs/MWH.
- Impossible to finance or permit a unit subject to future CCS requirement since CCS is not commercially demonstrated and would increase power costs by 80%.

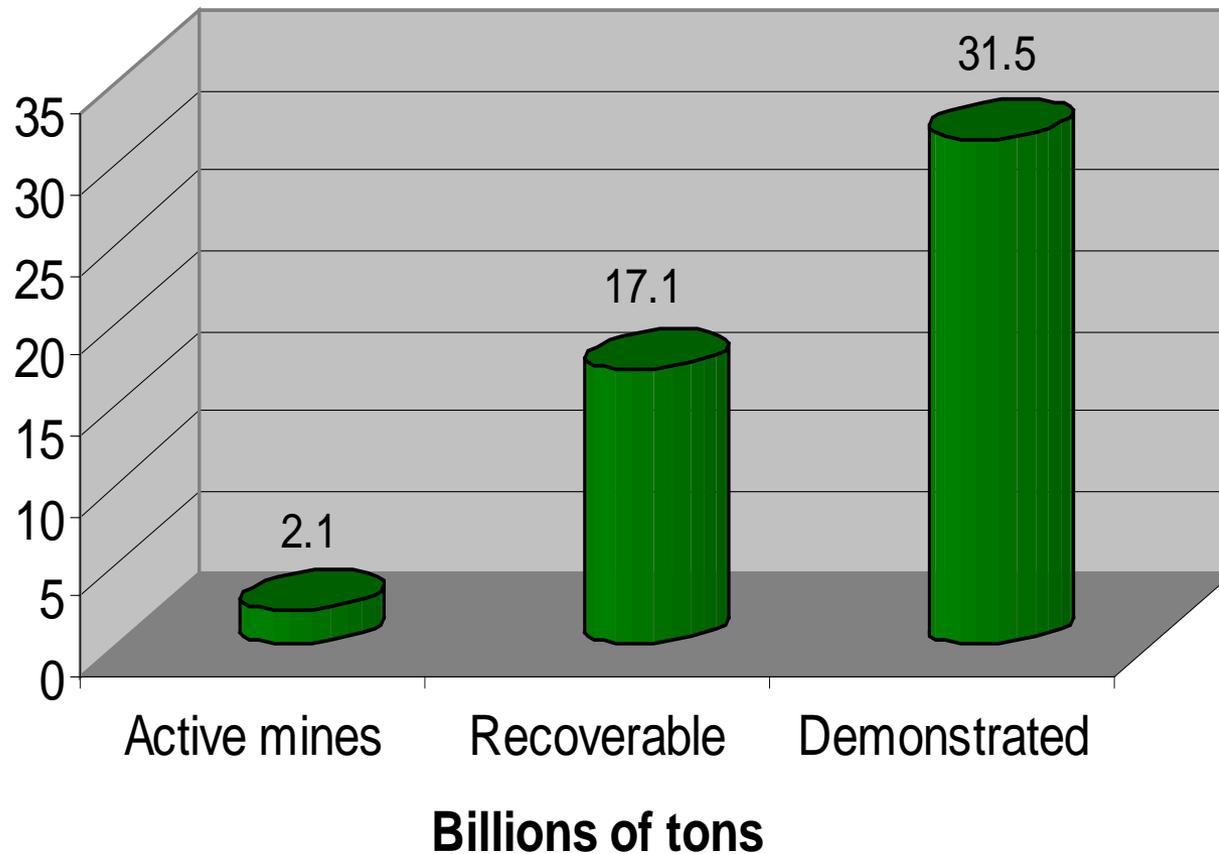
Meanwhile, EPA has more cards to play

- Revised PM2.5 standards Dec. 2012
- Coal ash/residuals rule
- 316(b) water intake rule
- Ozone standard proposal Dec. 2013

All of the above!

- An “all of the above” energy policy should mean just that.
- Reliance on low current natural gas prices invites a dangerous imbalance in our electric generation portfolio, with adverse electric rate, reliability, and job impacts.
- Advanced coal must be an option for 40-60 year utility generation investment planning.

WV: The strength of reserves



Source: DOE/EIA Annual Coal Report (2011)

Acknowledgments

- Thanks to Governor Tomblin for extending this invitation.
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Questions?