



National Developments in CHP in 2012

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NYSERDA: CHP in New York State; The Next Generation

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Today's Presentation

- Recent and future regulatory changes that may result in coal retirements and new opportunities for CHP
- Administration commits to 40 MW by 2020
- CHP Legislation in play
- 2012 ACEEE CHP Scorecard

National Outlook is Favorable

- Benefits recognized by policy makers
- Many states promoting CHP along with renewables
- New natural gas supplies translate into price stability
- Regulatory pressures on conventional technologies open up opportunities

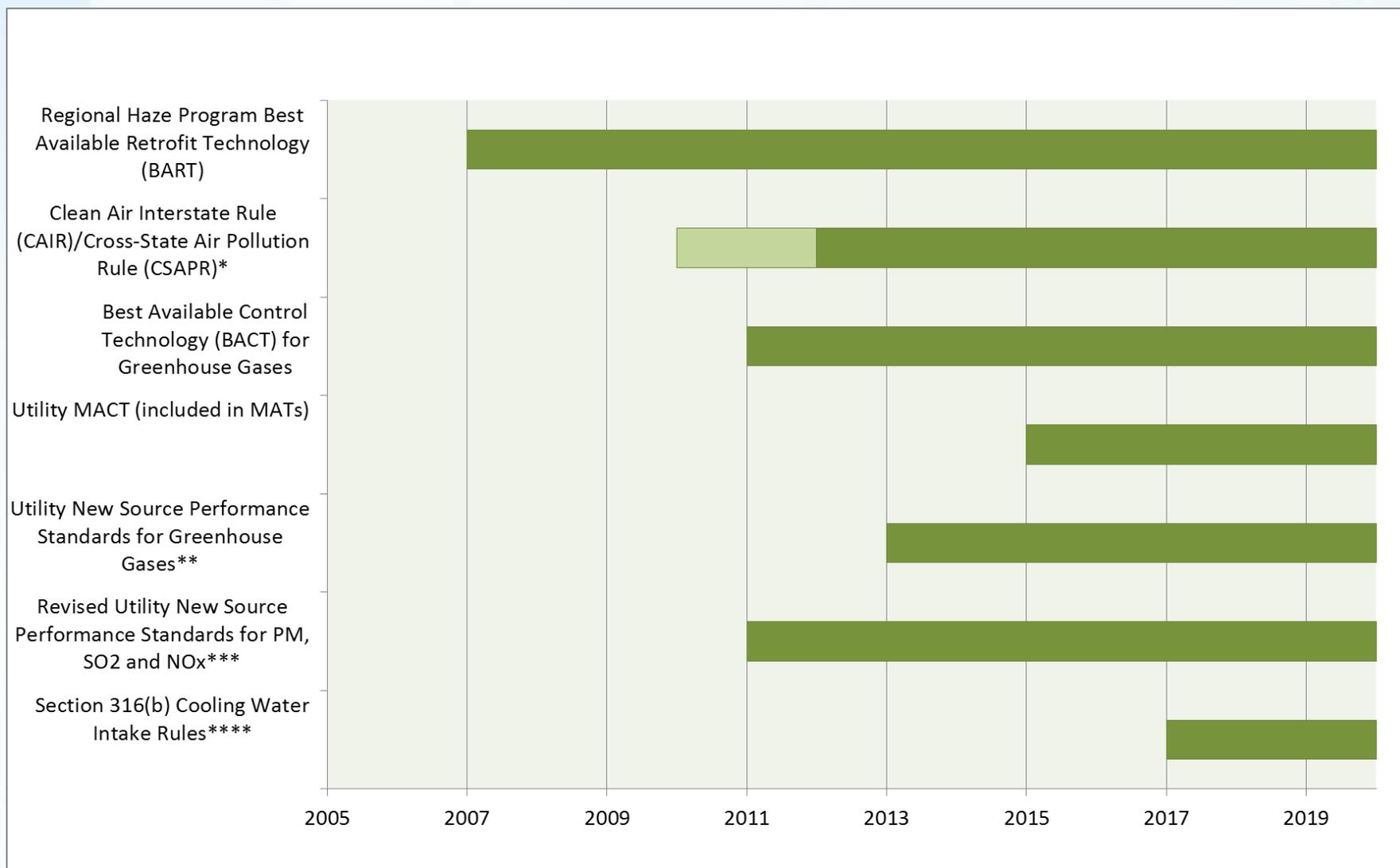
Economic Factors Favoring CHP

- Low and stable natural gas prices
- Aging coal-powered fleet
 - Median operating year: 1966
- Older and smaller power plants more likely to be retired
- Newer and larger plants more likely to receive new pollution controls

Regulatory Factors

- Cross-State Air Pollution Rule (CSAPR)
 - SO₂ and NO_x rules affect generators in 28 states
 - Currently stayed, but EPA pursuing revised rule
- Utility MATS and Boiler MACT
 - Regulates mercury emissions from generators and boilers
- BACT for Greenhouse Gases
 - Case-by-case cost-benefit evaluation of best emission controls
- New NSPS for generators for Greenhouse Gases
- Upcoming NAAQS for Ozone and PM

Implementation Timeline of Selected Air Regulations



Opportunity for Investment

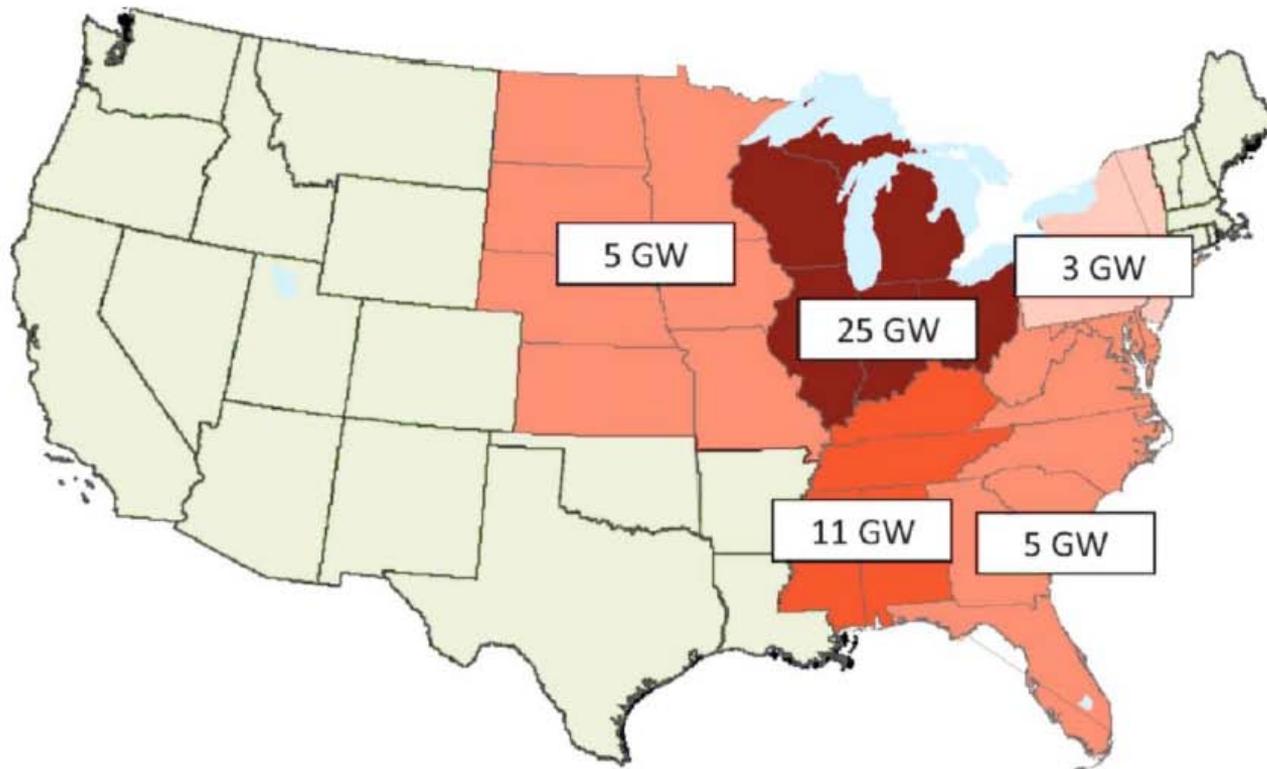
- Over half of coal plants in U.S. lack at least one major pollution control
- \$70-180 billion will be spent on compliance*
- Opportunities for new cost-effective energy assets that can compete with costs of compliance, maintenance

Nationwide Coal Retirements

- Variety of estimates
 - 25GW by 2015
 - 65GW by 2020
- Regions most affected
 - Midwest ISO
 - ERCOT
 - PJM

At Risk Coal Generation

Figure 2. "At Risk" Coal Generation by Region



Source: ICF 2010

The CHP Opportunity

- Cost-effective compared to more traditional generation
- Can take advantage of local fuel opportunities
- Can offer industrial facilities more control over energy prices
- Far more efficient than traditional generation

Replacing Coal with CHP

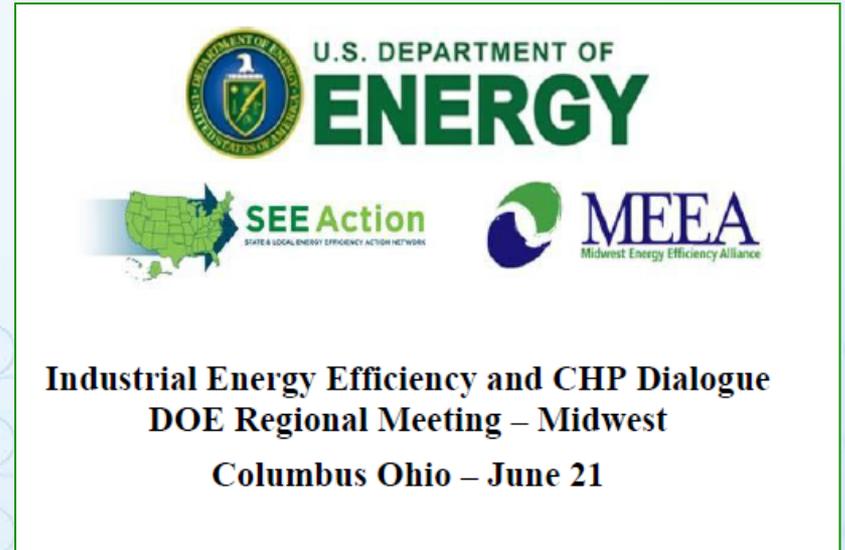
State	Range of coal retirements (MW)	Total economic potential for CHP, high case (MW)
Alabama	846 - 3,478	1,501
Colorado	532 - 1,195	192
Georgia	1,256 - 2,578	833
Indiana	1,663 - 2,019	611
Iowa	82 - 1,193	39
Kansas	0 - 479	193
Kentucky	1,713 - 2,180	245
Louisiana	0	1,485
North Carolina	2,345 - 2,904	1,338
Ohio	2,228 - 4,936	712
South Carolina	388 - 1,682	1,946
West Virginia	1,707 - 3,109	588

Conclusions: CHP to replace coal

- We'll be retiring older coal plants, but it is not the end of the world for coal
- Substantial opportunity for energy efficiency exists as result of coal retirements
- Combined heat and power (CHP) in particular is well-suited to near-term needs and can help replace lost capacity
- Existing utility business models need to be changed to encourage CHP and industrial energy efficiency

Administration Commits to 40GW CHP Goal

- Funding for CHP in EERE Budget Req.
 - AMO \$19 MM
 - Buildings \$6 MM
- Regional CHP events
 - Columbus, OH
- CEAC tech support for CHP analysis



Legislation in Play

- Bingaman – Clean Energy Standard (CES)
 - S 2146
 - CHP qualifies at 50% efficiency
 - Waste Energy Recovery qualifies for credits
- Bass-Matheson – Smart Energy Act
 - HR 4017
 - Directs DOE to plan to double electricity production by CHP

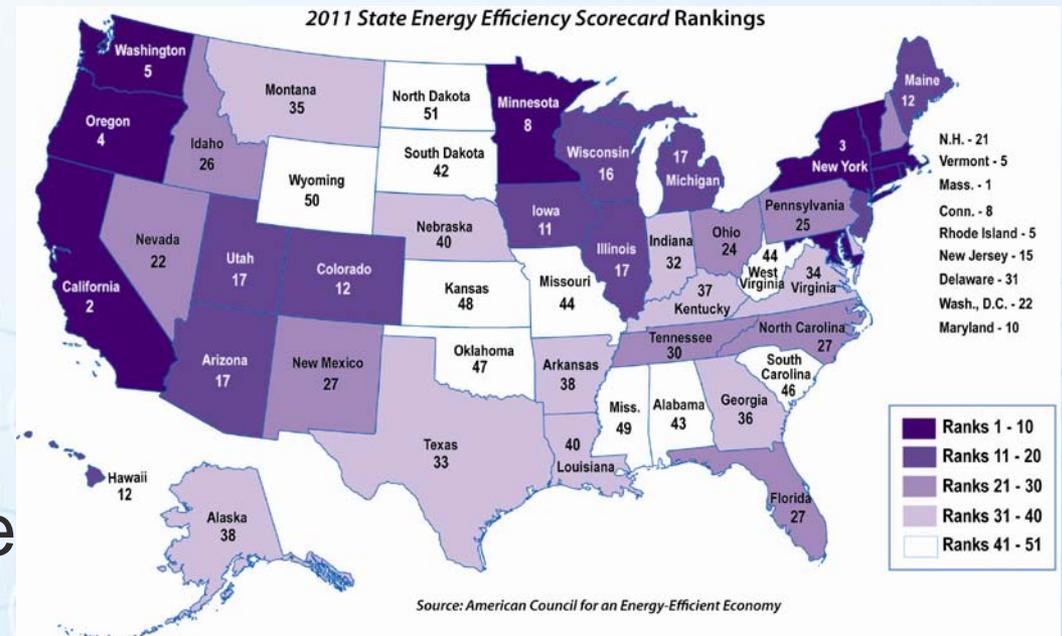
Conclusions: National Policy

- There is support in the White House and on Capitol Hill for CHP
- Department of Energy is leading the effort
- EPA sees the environmental benefits of CHP and is changing some rules
- Bi-Partisan Support
 - though it may not matter in 2012

ACEEE annual State Scorecard

CHP Analysis

- Factors in to state scores
 - 5 of 100 pts
- Revised methodology for 2012
- 2012 Report due late Summer



2012 Methodology

- Interconnection (1)
- Net metering (.5)
- Treatment in portfolio standards (1)
- Incentives, grants, revenue streams (1)
- Financing opportunities (.5)
- Emissions treatment (.5)
- Additional supportive policies (.5)
- Reporting of local electric, gas, standby rates

State Support for CHP

- 18 States include CHP or waste energy recovery in portfolio standards
- Specific incentives for CHP (tax credits, streamlined permitting, capital incentives) in:
 - NY, CA, CT, MA, NJ, NC
- States contemplating rate-basing CHP

Final Conclusions

- Recent developments may translate to increased investments in CHP
- There is broad support nationally and at the state level for CHP
- Economic barriers can be overcome, though not completely: assistance often required
- Access to retail markets via utility ownership could be a game changer for CHP

Thank you!

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