An Update on CHP in the Midwest

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Emerging Opportunities

- Improving economics
- Gap in generation created by retirement of older power plants
- Replacement of industrial boilers that will not be compliant with Boiler MACT
- Risk mitigation and grid resiliency
- Utility ownership/stakeholder
Issues Driving CHP Investment

- **Energy Costs**: electricity use, demand, standby rate
- **Value to the Host**: electricity, thermal, multiple risk factors
- **Value to the Utility**: generation needs, grid stability, ancillary benefits
- **State Policies**: interconnection stds, permitting, portfolio stds.
Where is CHP Being Deployed?

2005 to Present. Source: ICF CHP Database

- **Dark Blue**: more than 50 installations
- **Medium Blue**: 11-50 installations
- **Light Blue**: 6-10 installations
- **Even Lighter Blue**: 1-5 installations
- **White**: no installations

[Image of a map showing the deployment of CHP across the United States, with states color-coded according to the number of installations.]
Midwest Installed CHP Generation Capacity by Sector (11,000 MW)

Source: ICF International
Installed v. Technical Potential
(11,000 MW) (41,400 MW)

Source: ICF International
CHP Projects in the Pipeline

- 38 sites have announced projects with a total capacity of 588 MW
- Primarily biomass or natural gas
- Coming online between 2014 and 2016

Source: ICF International
Market Driven Retirement of Coal-Fueled Power Plants

- EPA regulations are only half the story
- Low natural gas prices & rising coal prices are facilitating a shift from coal to natural gas generation
- Retiring plants generally are older, (40+ years) have little or no pollution controls, and often don’t run full time
“At Risk” Coal Generation by Region:
Greatest Potential Problems in Midwest & South Central

Source: ICF International for INGAA (May 2010)
CHP as a Compliance Pathway

Because CHP is 40% more efficient than central generation, it can be used:

- By utilities to meet State Implementation Plan (SIP) NOx requirements
- Eligibility of output based compliance mechanisms was authorized by EPA in 2000
- States can have set-asides for CHP
- To comply with Clean Air Act rules (Section 111(d)) for power plants for CO2 emissions
- By industrial boiler owners to comply with new Boiler MACT rules for HAPs
Regional Efforts to Increase Deployment of CHP & WER

- National Governors Association (NGA) Policy Academy (2012-2013)
  - AL, AR, IA, IL, TN
  - Workshop in Philadelphia, PA on 4/6/13
  - Workshop in Chicago, IL on 6/5/13

- Great Plains Institute (GPI) Catalyzing Midwestern Initiatives to Accelerate CHP and WHP
  - IA, IL, IN, MI, MN, OH, WI
  - Event in Chicago, IL on 10/21/13
CHP Resources

• Check out your state’s CHP policy profile: http://aceee.org/topics/chp

• ACEEE report and white papers on CHP and utilities: http://aceee.org/blog/2013/07/are-utilities-missing-out-benefits-co

Thank you!

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