

Indiana Energy Conference

The Big Energy Shake-Up: Adapting to Change

October 15, 2015 | JW Marriott | Indianapolis IN

CONSUMER PERSPECTIVE: IMPACT ON ELECTRICITY COSTS FOR AMERICAN BUSINESS

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Electricity Consumers Resource Council

- ELCON is the national organization representing the interests of large industrial consumers of electricity.
- ELCON was founded in 1976.
- The organization's overarching objective is to advocate sound federal and state energy and environmental policies with a united front that is focused and cost effective.
- Founding principles for economic regulation are based on cost causation. We believe that electricity rates based on how costs are incurred preserves the competitiveness of US manufacturers and sustains manufacturing jobs.



Direct Impacts

	EPA	NERA	EVA
Electric Sector Compliance Cost	\$1 to \$8.4 billion/yr	\$34 to \$41 billion/yr	\$98 billion in 2020
Other Compliance Costs (Mainly natural gas costs)		\$2 to \$16 billion/yr	\$75 billion in 2020
Total Compliance Costs	\$1 to \$8.4 billion/yr	\$560 billion cumulative	\$173 billion in 2020
Electricity Cost Increase	1 to 3%	12 to 17%	8%
Henry Hub Natural Gas Price Increase	-8 to 5%	2 to 29%	100%
Coal Retirements	27 to 38 GW	45 to 169 GW	46 GW



Economy-Wide Damage

Heritage Foundation modeled the cumulative effects of phasing out coal in the 2015-2038 timeframe. By end of 2023:

- Employment falls by nearly 600,000 jobs (EPA predicts a net gain of about 50,000 jobs)
- Manufacturing loses over 270,000 jobs
- Coal-mining jobs drop 30%
- A family of four's annual income drops more than \$1,200 per year, and its total income drops by nearly \$24,400 over the entire period of analysis
- Aggregate gross domestic product (GDP) decreases by \$2.23 trillion over the entire period of the analysis



Indiana's Coal Exposure

- Indiana ranked eighth among the states in coal production in 2013. Coal-fired electric power plants provided about 85% of Indiana's net electricity generation in 2014.
- Indiana's industrial sector, which includes manufacturers of aluminum, chemicals, petroleum, glass, metal casting, and steel, consumed more energy in 2012 than the residential and commercial sectors combined.
- These manufacturers are in Indiana because of its tradition of low-cost coal-fired generation.
- Indiana utilities announced that at least 22 coal units will be retired or converted (3,408 MWs).
- Coal is responsible for 26,000 direct and indirect jobs. Indiana stands to lose 12,520 jobs.

Sources: EIA; ACCCE; Heritage Foundation



The Hardest Hit in Indiana

- There are 1.3 million lower-income and middle-income families in Indiana. These families represent 52% of the state's households and take home an average of less than \$2,000 per month (less than \$24,000 per year) after taxes.
- Real family incomes have declined since 2001. Declining family incomes magnify the effects of higher energy prices on families. Minorities and senior citizens are especially vulnerable to energy price increases due to their lower and often fixed household incomes.

Source: ACCCE



Global Benefits of the CPP

- In and of itself, EPA's proposal would have virtually no effect on climate change.
- It will reduce atmospheric CO₂ concentration by less than one-half of a percent.
- Lowering global average temperature by 2/100th of a degree.
- Reducing sea level rise by 1/100th of an inch—equal to the thickness of three sheets of paper.

Source: ACCCE



Clean Power Plan

Its Cost & Impact in Context

- Only a first step – the “camel’s nose under the tent.”
- Establishes “foundation for longer term GHG emission reduction strategies.”
- Total combined monetized climate benefits range from \$2.8 to \$3.3 billion in 2020; \$10 to \$12 billion in 2025; \$20 billion in 2030 (3% discount rate; 2011\$).
- EPA estimates of cost (including those of other advocates and opponents) assume least-cost implementation, i.e., the low cost options are adopted before the higher cost options.



Where are Cost-effective Compliance Options Going to Come From?

"Clean" Resource	Cost Consequences
New nuclear plants	Vogtle (46% share) costs have increased from \$1.4 to \$7.5 billion
Integrated gasification combined cycle (IGCC)	Kemper costs have swelled from \$1.8 billion to \$6.2 billion Edwardsport costs increased from \$1.9 billion to \$3.5 billion
Distributed Generation - Residential Solar (Cost per generated kWh)	Massachusetts...28.7¢/kWh California...19.2¢/kWh
Residential Energy Efficiency (EE)	Costs of EE investments are about double the savings [-9.5% annual rate of return]

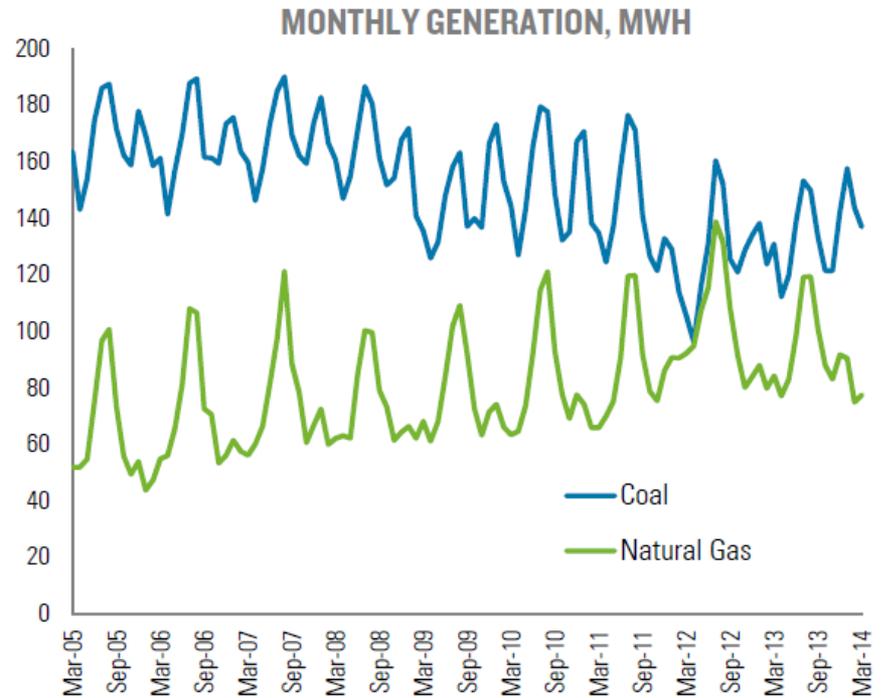
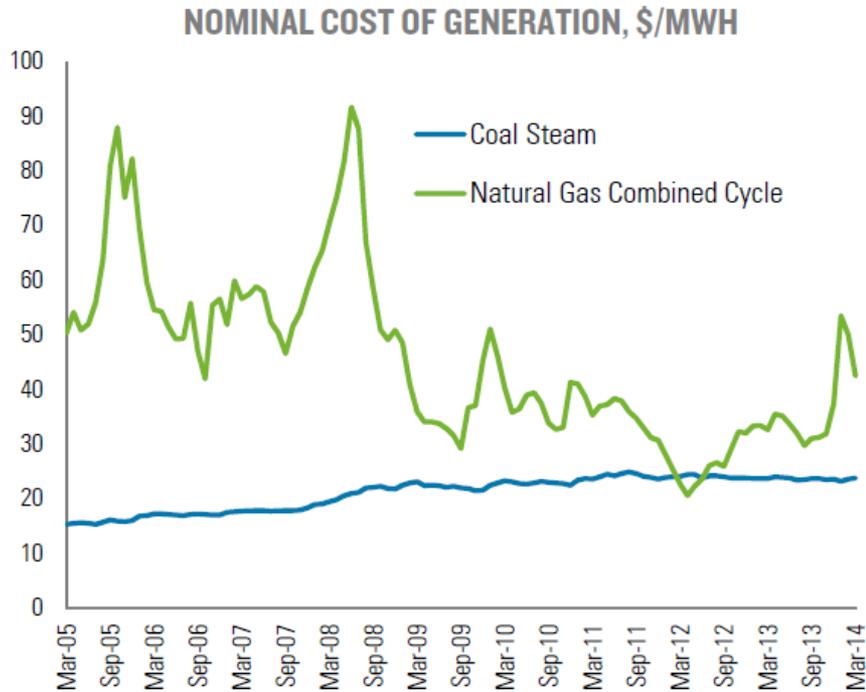


Dead-End Technologies



- The current renewable technologies are simply not up to the task if existing life-styles are to be preserved – if not enhanced.
- Instead of subsidizing dead-end technologies, resources need to be applied to true innovation.

Short-term, the Future is Probably Natural Gas



Source: EIA



Other Long-term Issue: Annex II

- The group of “developed” countries identified in Annex II to the UN Framework Convention on Climate Change. Includes mainly OECD countries responsible for most of CO2 emissions to the atmosphere since 1960 (the “carbon debt”).
- The “developing” countries (including China, India and Brazil) are expecting the Annex II countries to provide financial resources to assist them in complying with their obligations under any treaty including the transfer of “clean” technologies to them. They have also argued that the developed countries should compensate them for any economic harm created by the implementation of treaties on climate mitigation.
- The US is responsible for 40% of the “carbon debt.” US taxpayers will be on the hook for these additional obligations.



Conclusion

- We cannot presume that we can precisely predict how much it will cost the US (mainly its energy consumers and taxpayers) to implement the full range of domestic and global climate mitigation policies necessary to decarbonize the atmosphere.
- But it will be a very large number, and probably unprecedented in modern times.
- The outstanding concern is the question: Could this money be better used for better housing, health care, education, R&D, infrastructure – or other important personal and societal needs? And any of these actions will create jobs.

