

Low-Cost Electricity from Coal-Fired Generation?

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The View from the Electric Utility Board Room

- Coal-Fired Generation Is ***Not*** Being Included in Long-Run Utility Plans
 - NorthWestern Energy
 - The Northwest Power and Conservation Council's 6th Draft Regional Power Plan
 - Other regional utilities



The View from the Electric Utility Board Room

- Planned Coal-Fired Plants Are Being Abandoned
 - Montana Highwood Generating Station
 - Malmstrom Coal to Liquids Plant
 - Big Stone II in SD (MDU a partner)
 - Idaho: IPC IGCC and Sempra's Jerome Ctny
 - WY Pacificorp's Jim Bridger 5 & Sweetwater Projects



The View from the Electric Utility Board Room

- Not Just a Local Trend
 - From 2007 through August 2009 214 coal plants were on the drawing boards
 - 129 or 60% are now cancelled, abandoned, or on hold;
 - 33 or 15% are under construction or operating
 - 51 or 24% are in various stages of pre-construction development

US Chamber of Commerce and Source Watch



What's Going On?

“Radical Environmental
Activism”

(US Chamber of Commerce)

or

Basic Economic Rationality?



Economic Concerns

- Very high construction costs
 - Coal-fired generation is very capital intensive
- Lower natural gas prices and more optimistic projections of natural gas supply
 - Narrowing the gap between coal-NG prices
- Declines in the cost of renewable resources, especially wind
- Uncertainty about the economic feasibility of carbon capture and sequestration



Regulatory-Economic Concerns

- Impending regulation and uncertainty
 - Limits on and charges for carbon emissions
 - New limits on toxic emissions, e.g. mercury
 - Coal-fired waste: waste ponds, solid waste
- Loss of regional markets in the PNW
 - State limits on importation of high-carbon electric sources
 - State requirements for reduced carbon emissions



Is It Economically Irrational to Turn Our Backs on a “Low Cost” Energy Source?

- In purely commercial terms, coal is not necessarily less costly
 - Delivered cost per Btu is lower, BUT
 - Capital costs are much higher
 - Efficiency of generation is significantly lower
 - Emission controls are more costly
 - Siting and regulatory costs are much higher



What Does “Low Cost” Mean?

Economic Costs Include All
Losses Associated with an
Action Not Just Commercial
Costs



*Hidden Costs of Energy:
Unpriced Consequences of
Energy Production and Use*

National Research Council
2009

Requested by Congress in the
Energy Policy Act of 2005



Non-Market Economic Costs of Coal-Fired Generation

- Degradation of Health, Early Death
 - Generation emissions and coal mining
 - Damage to crops, forests, lakes and property from air emissions
 - Depletion and degradation of water supplies from generation and coal mining
 - Landscape damage: mountain top-removal, strip mining
 - Reduction in visibility & recreational values
 - Climate Impacts
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National Research Council Estimates in \$ Terms

- Coal-Fired Electric Generation
 - Only “Common” Pollutants: SO₂, NO_x, PM
 - \$62 billion per year for all plants
 - \$156 million per year for the average plant
 - 3.2 cents per kwh generated
- Climate Change Costs at \$30/ton CO₂e
 - 3 cents per kwh generated
- Average retail price all sectors: 9 ¢ /kwh
 - Environmental damage costs add almost 70%

Conclusion

- From a purely business point of view, coal-fired generation currently is not a low cost source of electricity.
- When the non-market damage costs are included, coal-fired generation is definitely not a low-cost sources of supply.
- We have the technical ability to do better.
- Whether we have to political will to do better is uncertain at this point.

