

GLRWEIAM
Economic Policy Panel
“Fuel Price Forecasts”

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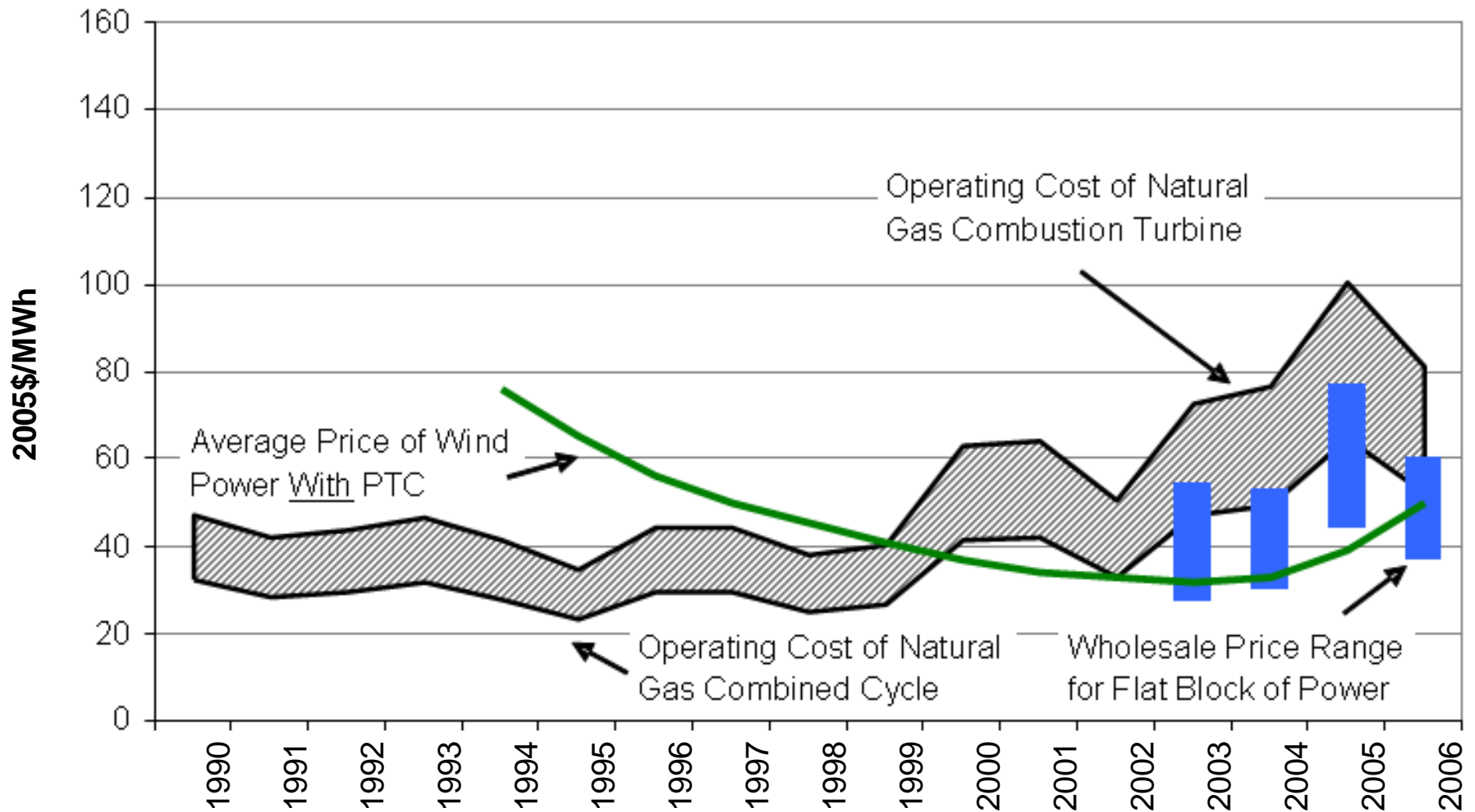
Fuel Forecasts are Fiction

- Probably will be wrong
- Consumers hurt if wrong too low
 - Too little renewable/efficiency investment
- If wrong too low, consumers pay
 - Fuel cost adjustment puts risk on consumers
- If wrong too high, consumers benefit
 - Enjoy lower than expected prices
 - More efficient and renewable than needed,
 - Puts hedge in place for next fuel price spike

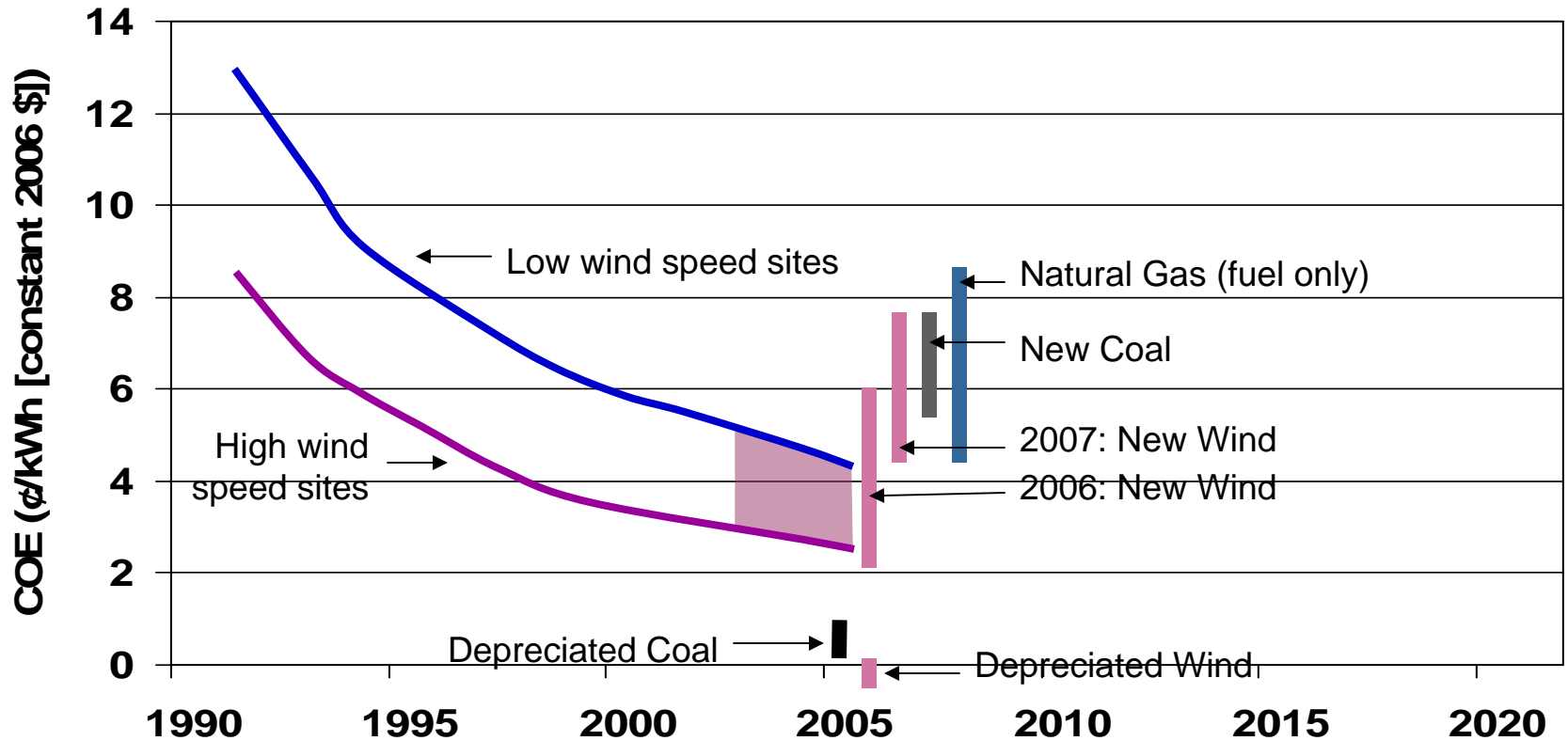
Assume High Fuel Costs

- Chose high forecasts from a range of reasonable projections
- Count risk hedge value
- Consider “non-utility” costs and benefits
- Important to consumers and citizens, all real costs and benefits, but not in utility rates:
 - Environment
 - Health
 - Water
 - Economic development: jobs, rural, manufacturing

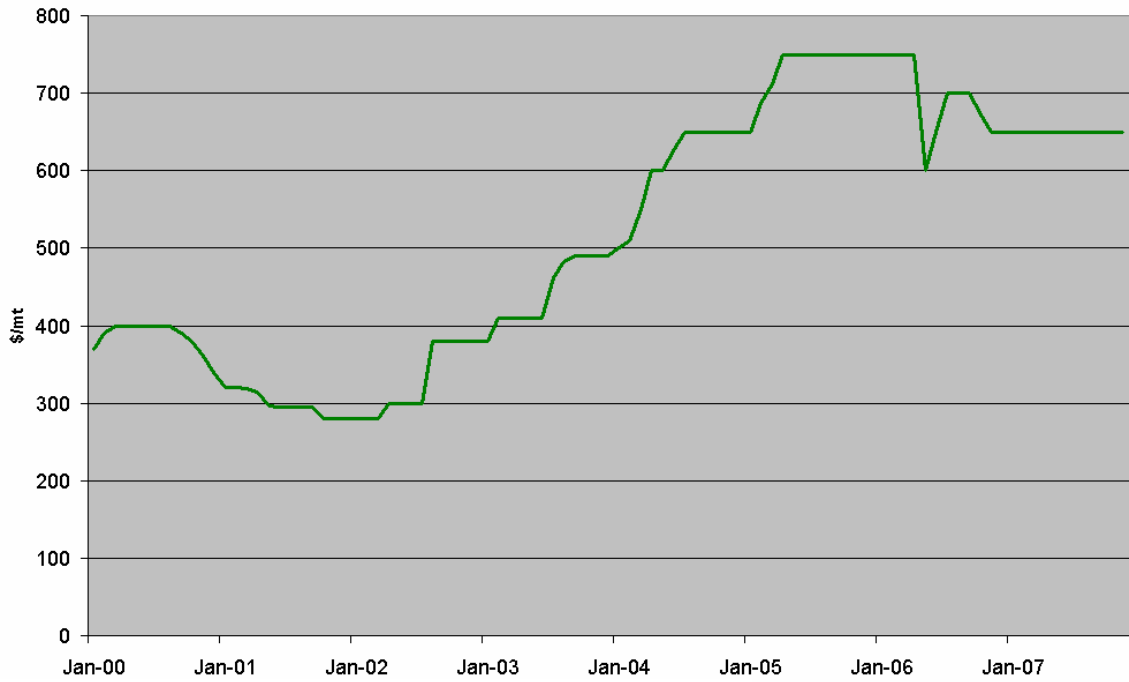
Comparative Generation Costs



Wind Cost of Energy



Historic Steel Prices - Cold Rolled



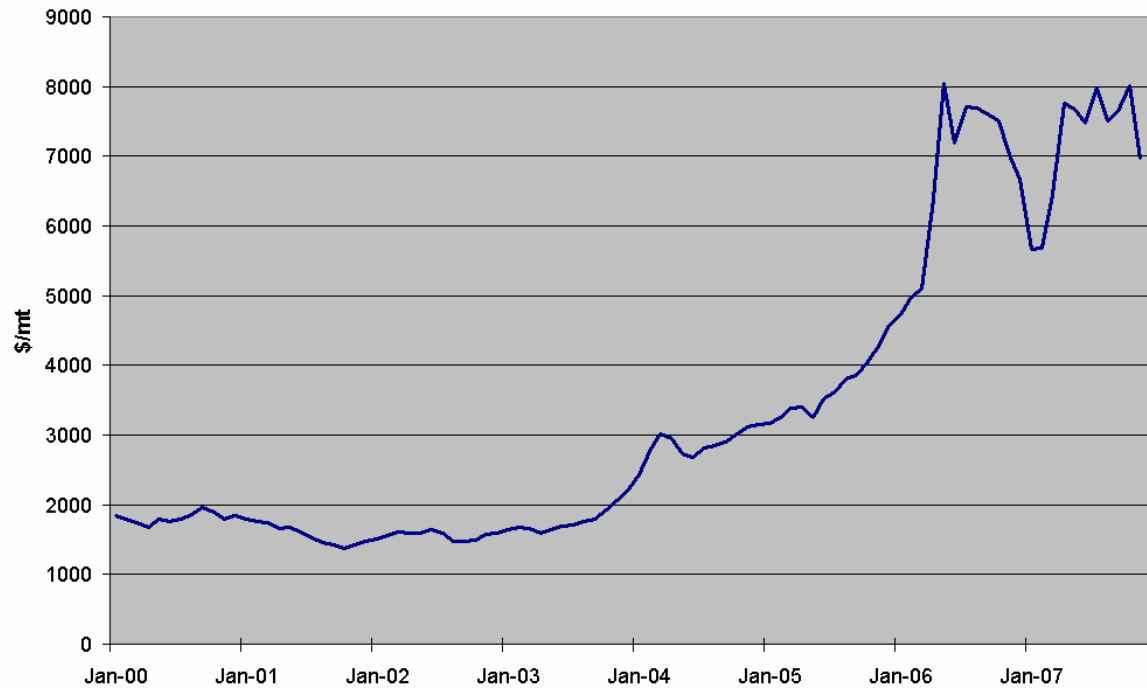
Steep Slide

The value of the dollar vs. the euro has fallen steadily since its 2000 peak. Dollars are worth a little more than half as many euros as they were five years ago.



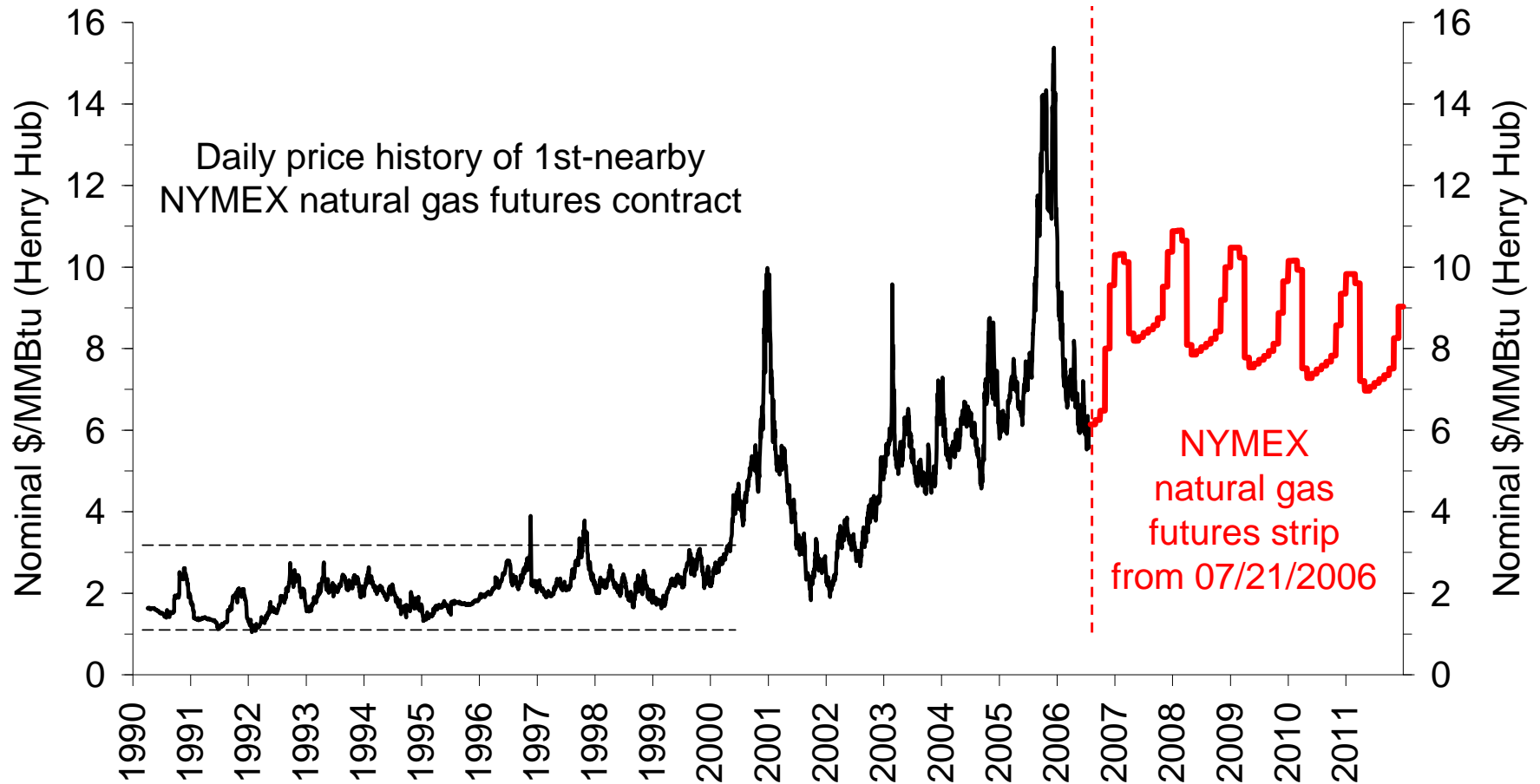
Source: Reuters via WSJ Market Data Group

Historic Copper Prices



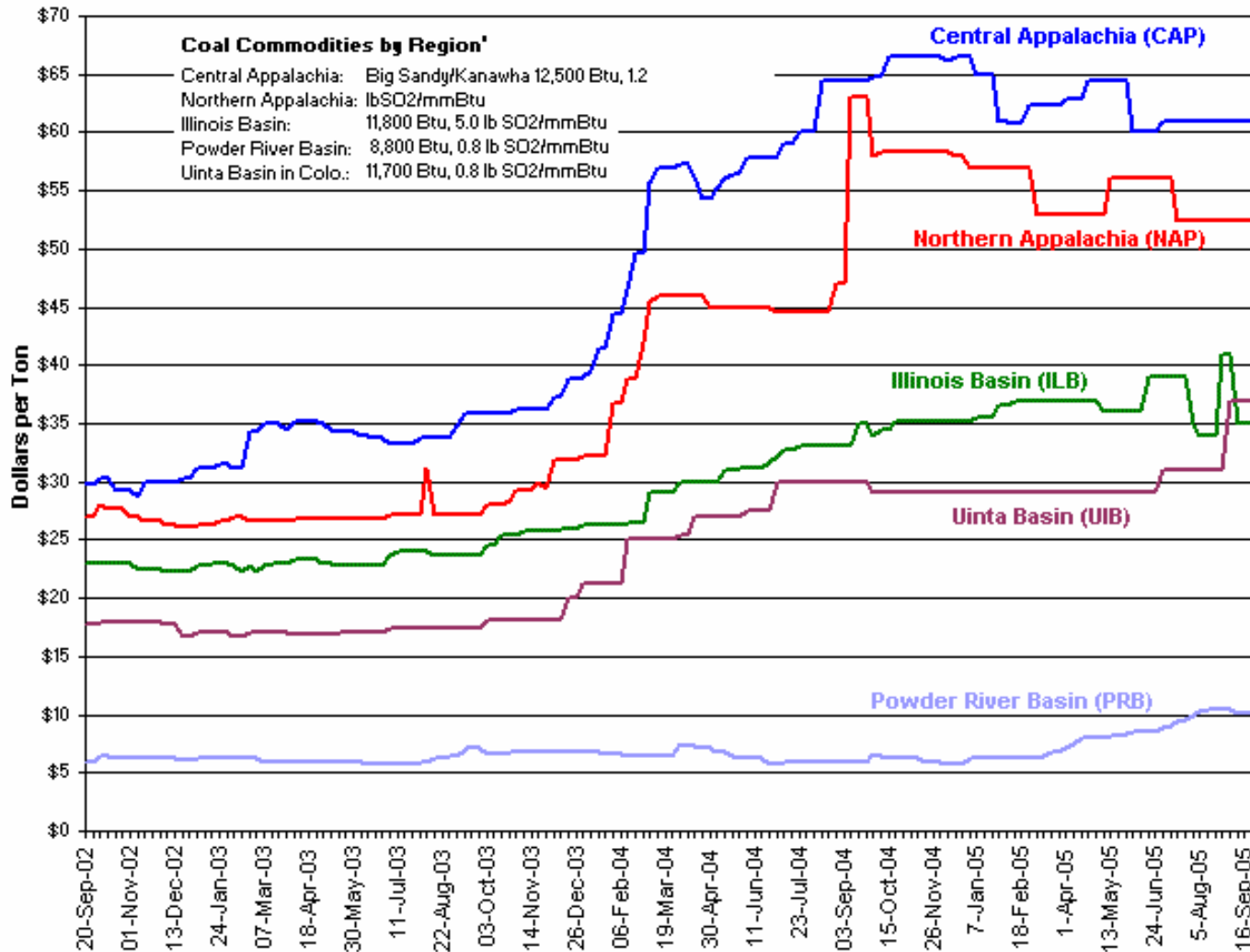
Wind Cost Drivers

Natural Gas – Historic Prices



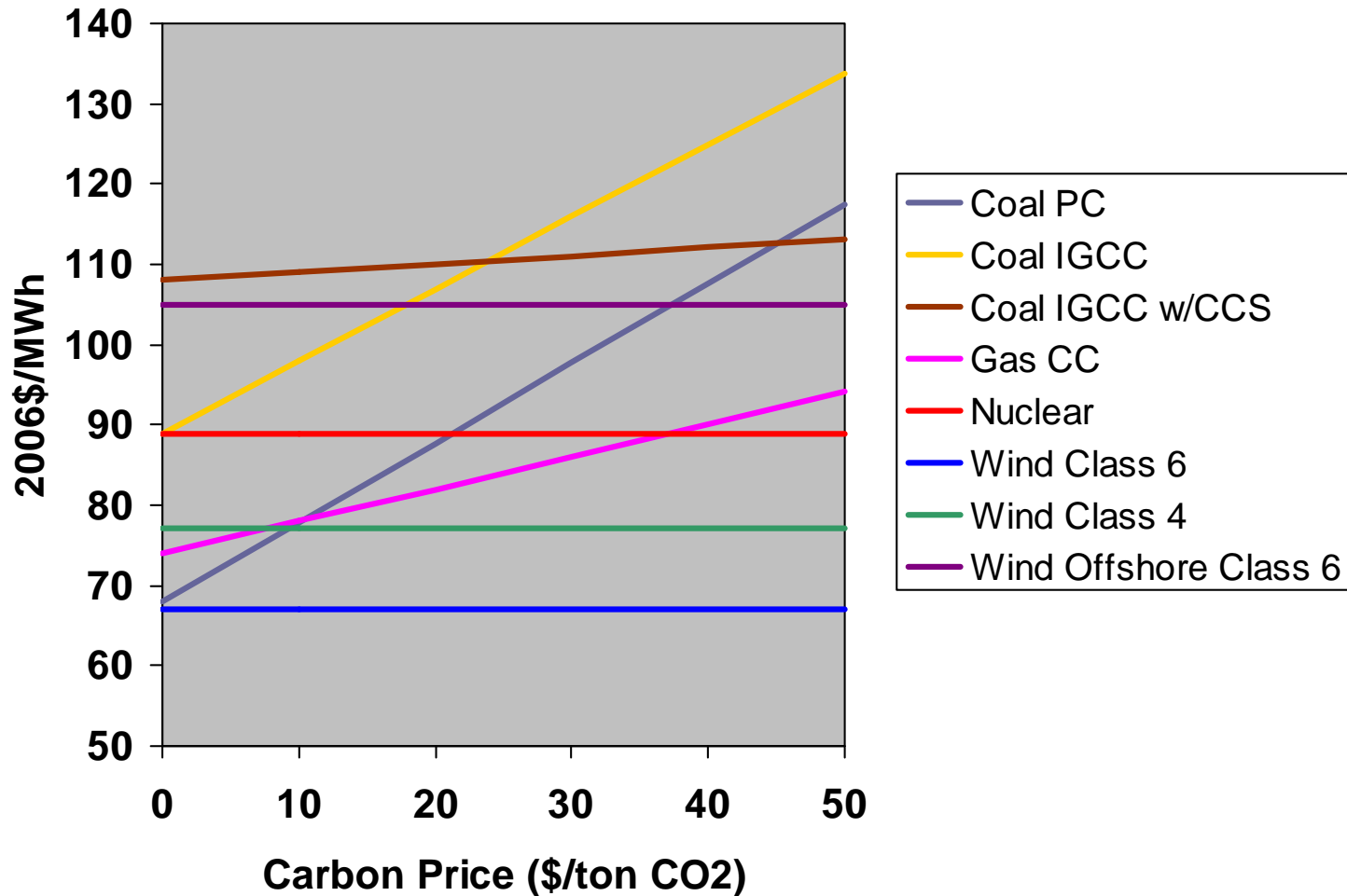
Source: LBNL

Historical Coal Prices



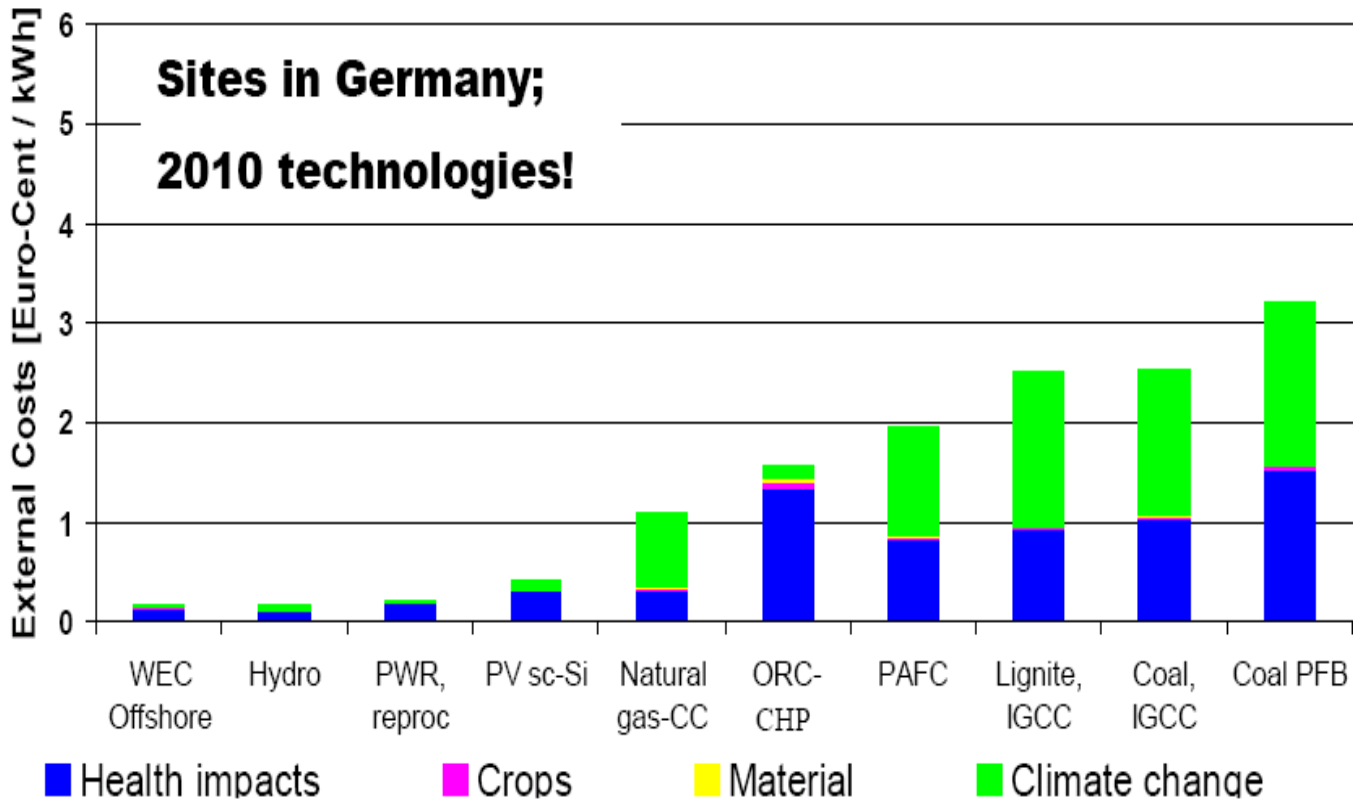
CO₂ prices significantly increase the cost of coal

Levelized Cost of Electricity (2010) vs. CO₂ Price

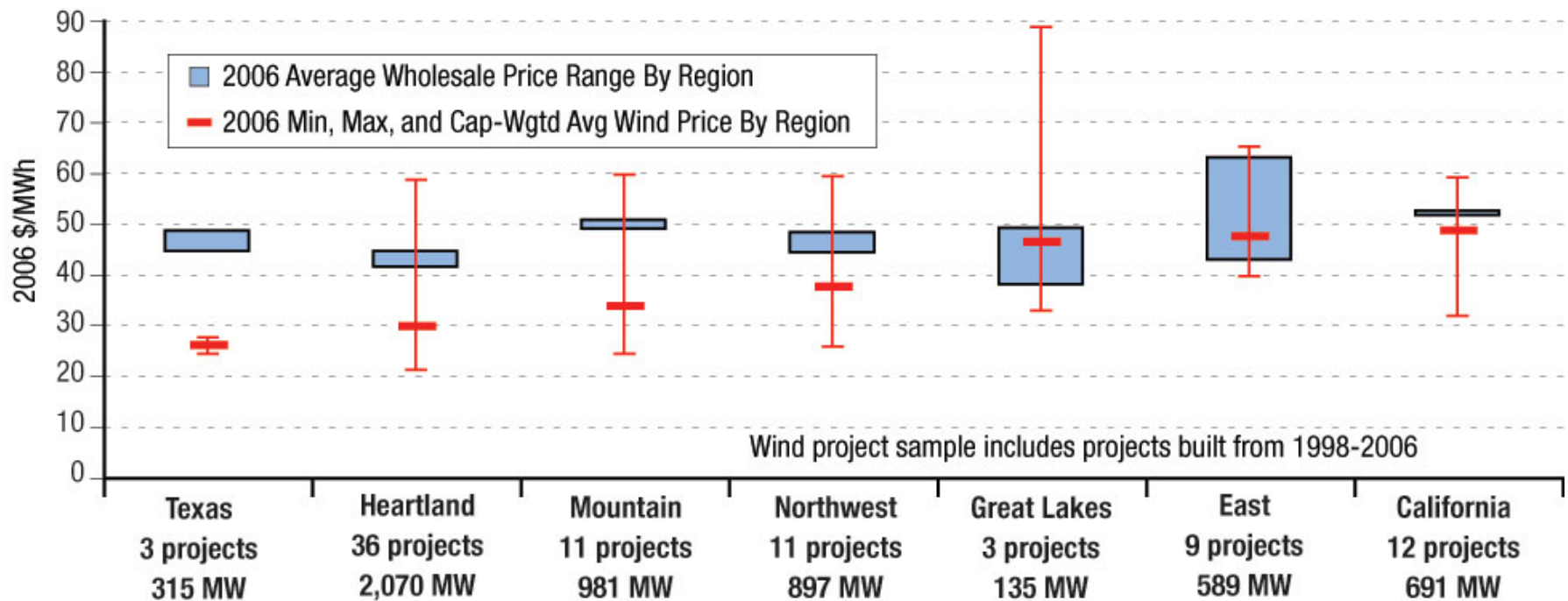


Major Market Distortion: External Costs of Fossil Fuels not Reflected in Pricing (The PTCs are a bargain)

External Costs of Power Stations [Euro-Cent / kWh]
19 Euro/t CO₂, Nitrates = 0.5 PM₁₀, YOLL_{chronic} = 50.000 Euro



In 2006, Wind Projects Built Since 1997 Were Competitive with Wholesale Power Prices in Most Regions



Source: FERC 2006 "State of the Market" report, Berkeley Lab database.