

One Company's Perspective on the Integrated Planning Model

For: Midwest RPO Workshop
March 9, 2005

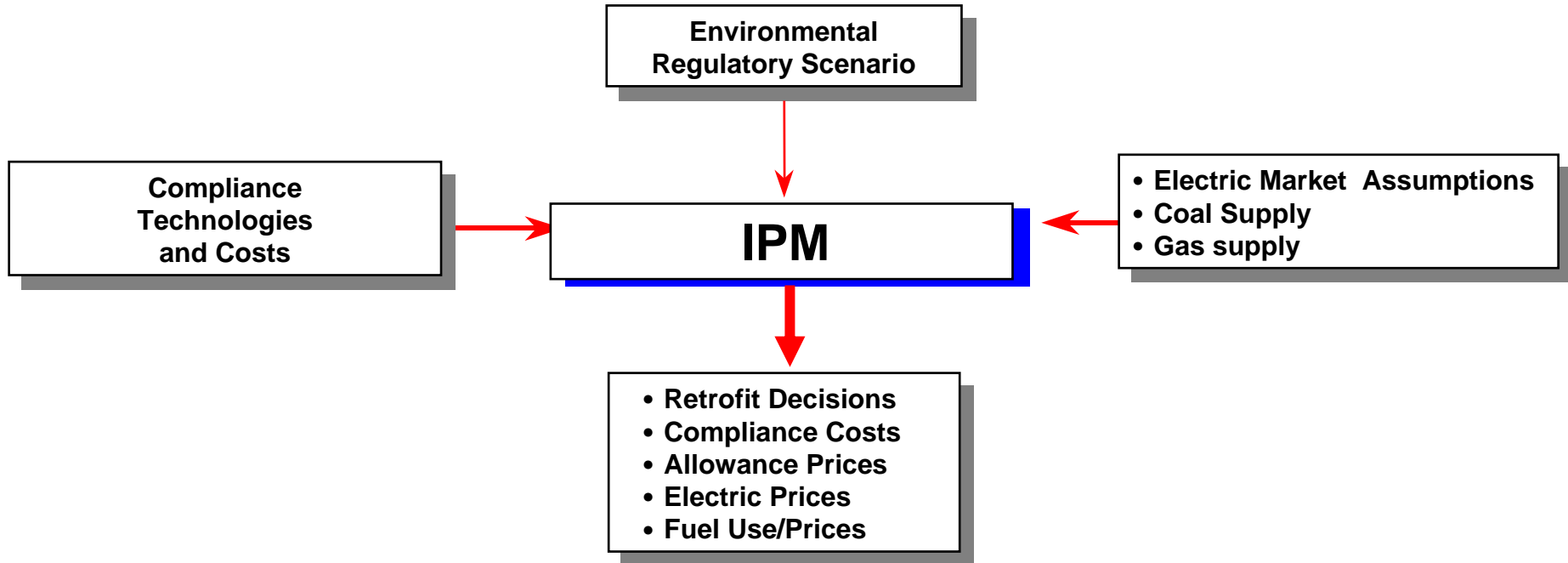
Dan Weiss, Cinergy Corp.

Using the Integrated Planning Model

Major Principles

- The Integrated Planning Model (IPM) like all models is a tool to learn insights about a particular issue
- IPM can provide insight about ‘directionality’
 - It is a “chain saw” – not a “scalpel”
- It is an economic model not an emissions model
- It is no better than the input assumptions
- It solves for ‘one’ solution
 - It is not a probabilistic forecasting tool
- It has ‘perfect foresight’ of the future
 - Unless you tell it otherwise.
- A utility company's own compliance plan will be different because it will be based on many more factors.

IPM Structure



IPM 'Global' Assumptions

What are the key drivers to getting the best answer.

- Fuel Price Assumptions
 - Natural Gas
 - Coal
- Capacity Related Assumptions
 - Electricity Demand Growth
 - Announced Generating Capacity Additions
 - New Power Plant Cost and Performance Characteristics
- Pollution Control Technology Assumptions
 - Existing and Announced Pollution Control Projects
 - NO_x, SO₂ and Mercury Pollution Controls
 - Cost and Performance
- Unit Specific Operating Characteristics

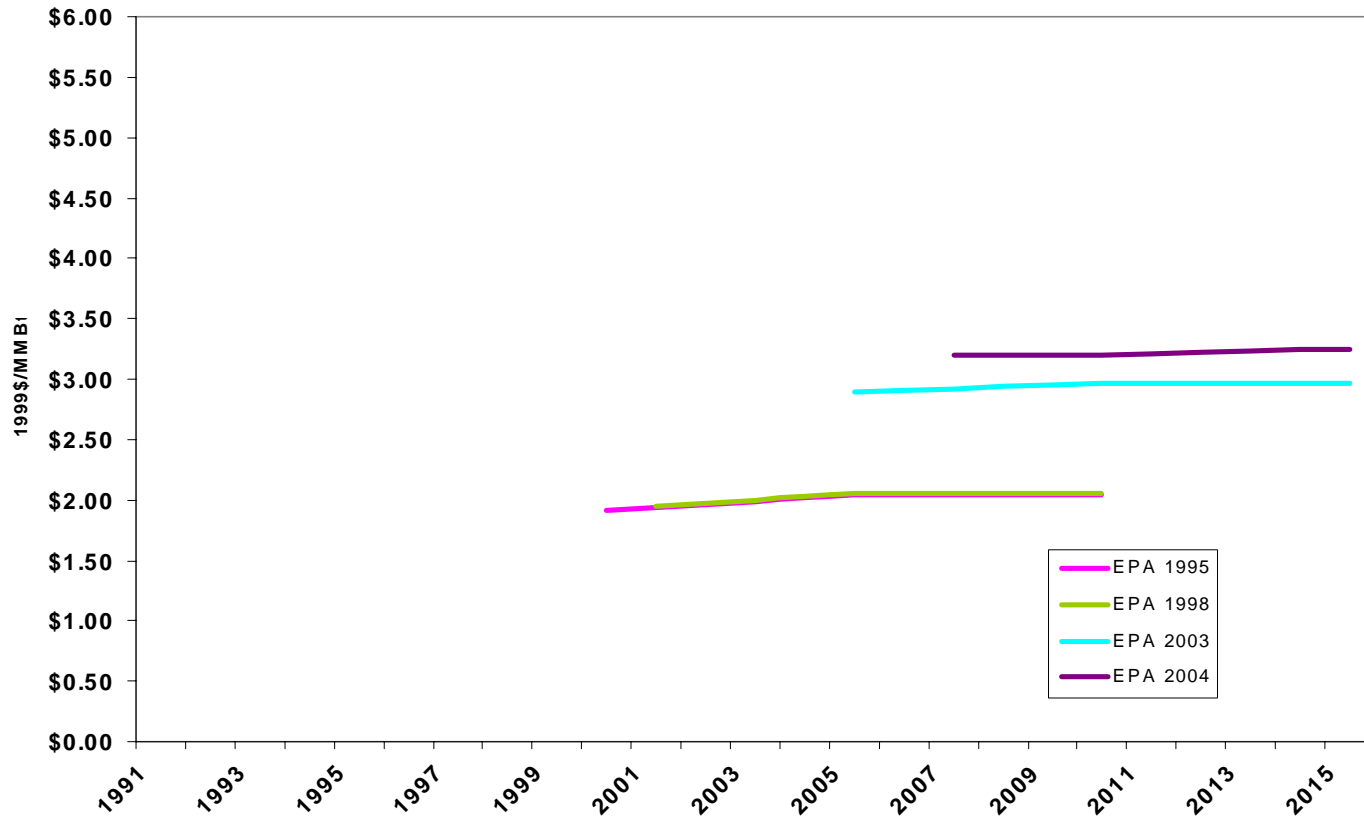
IPM 'Global' Assumptions

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Fuel Price Assumptions

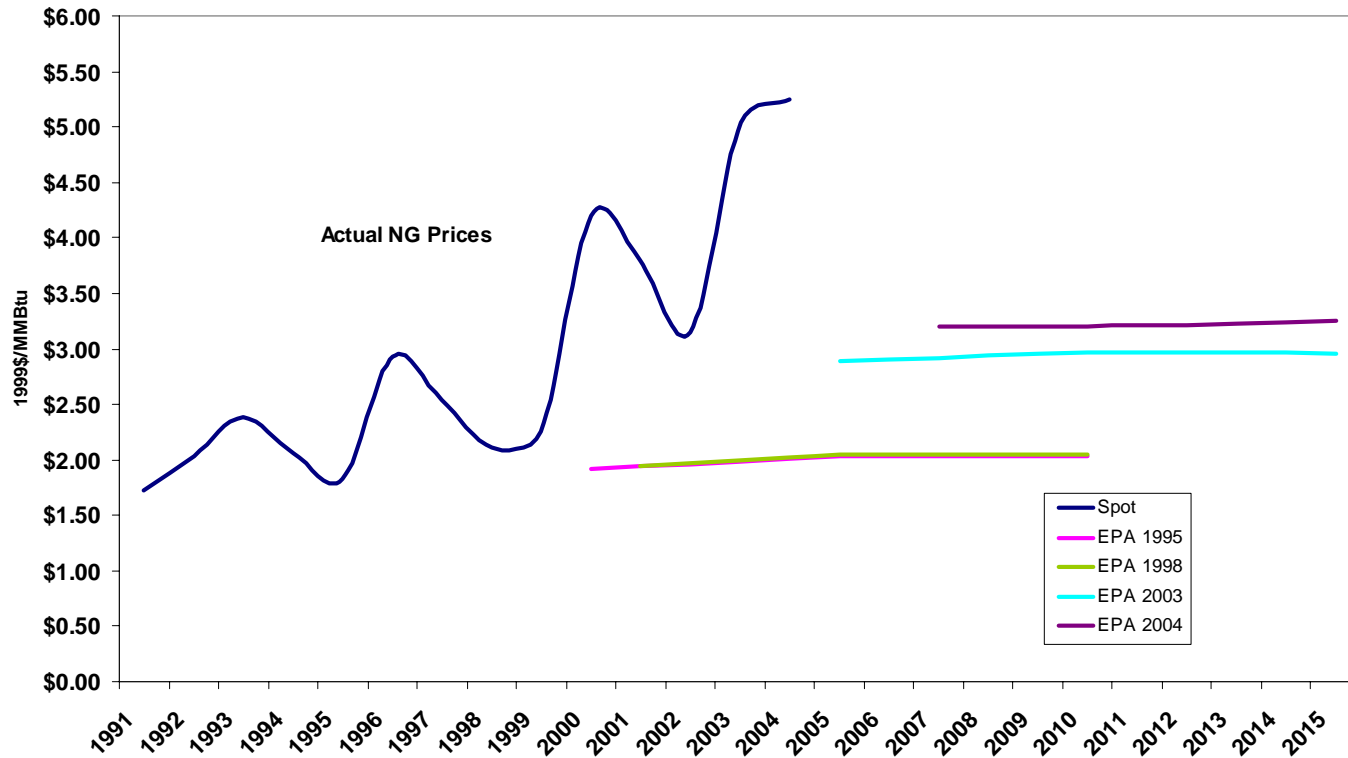
EPA Natural Gas prices over time



Fuel Price Assumptions

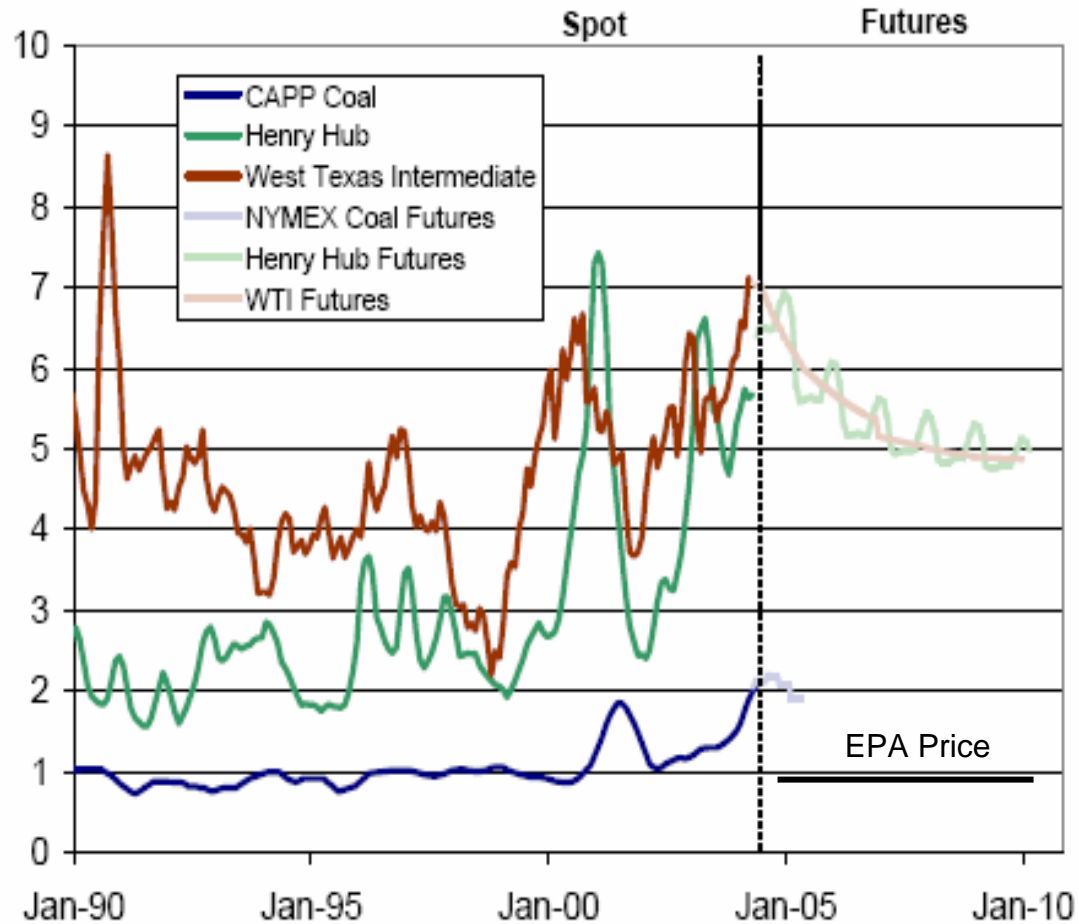
Compared to Actual Natural Gas Prices

EPA Forecasts Have Historically Compared Poorly to Actual Prices



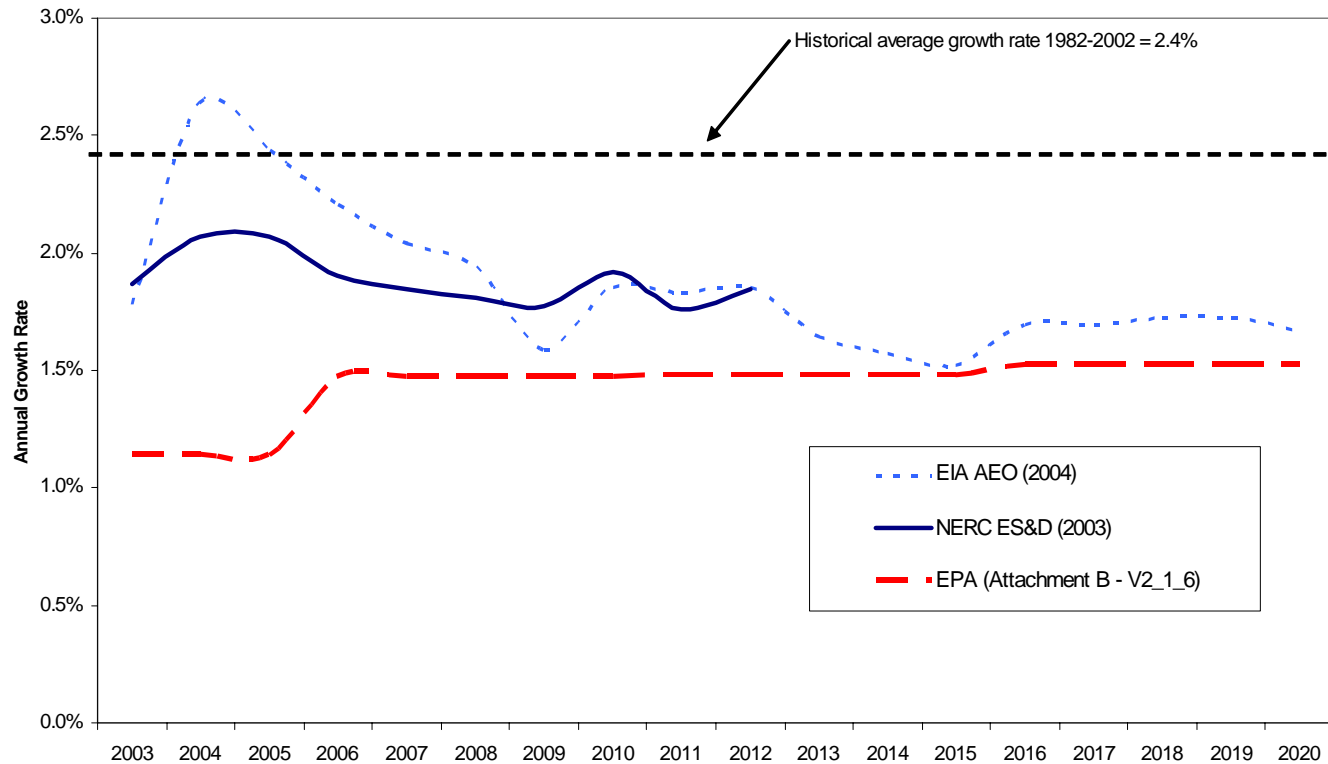
Fuel Price Assumptions

Coal and Natural Gas Prices



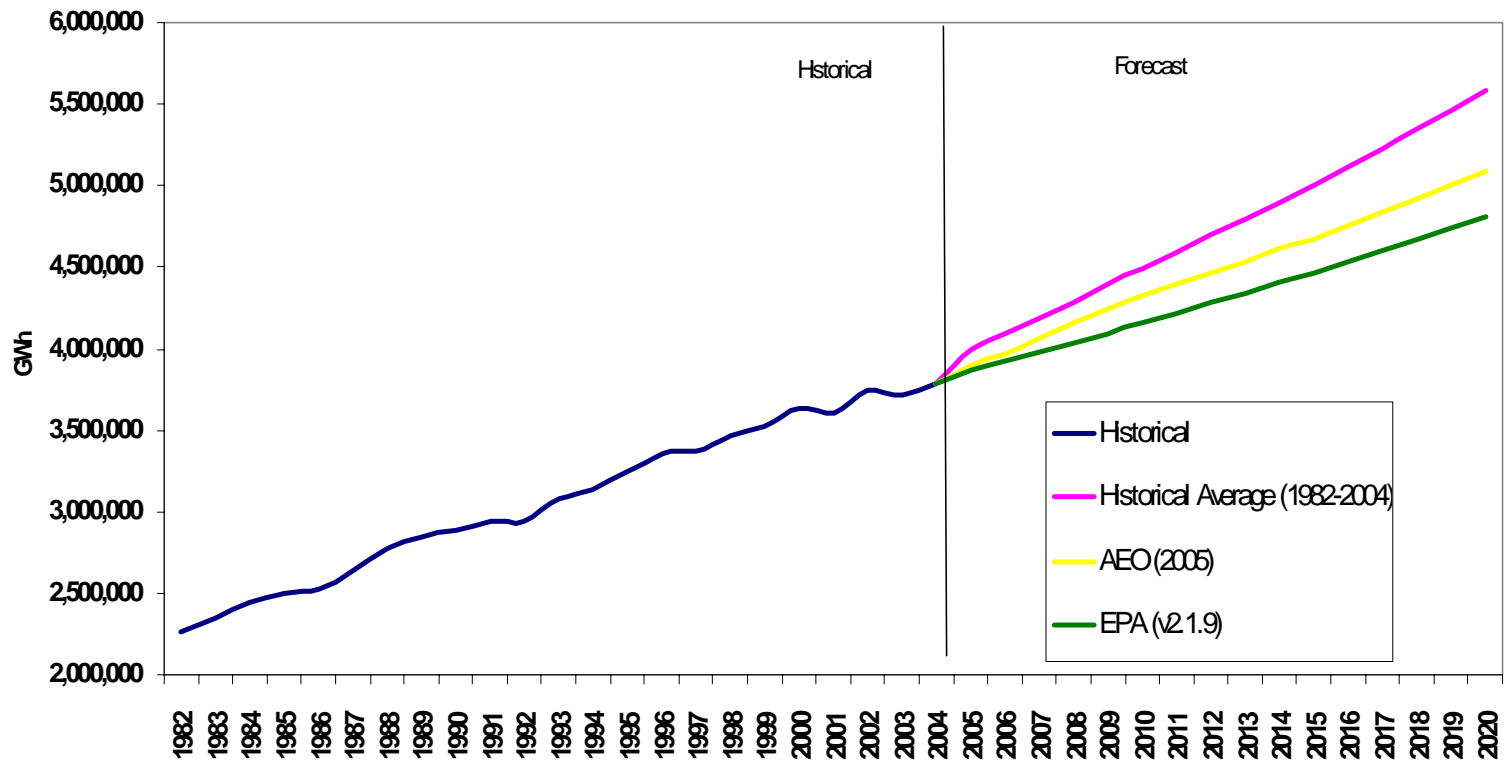
National Energy Growth Estimates

Annual Rate of Growth



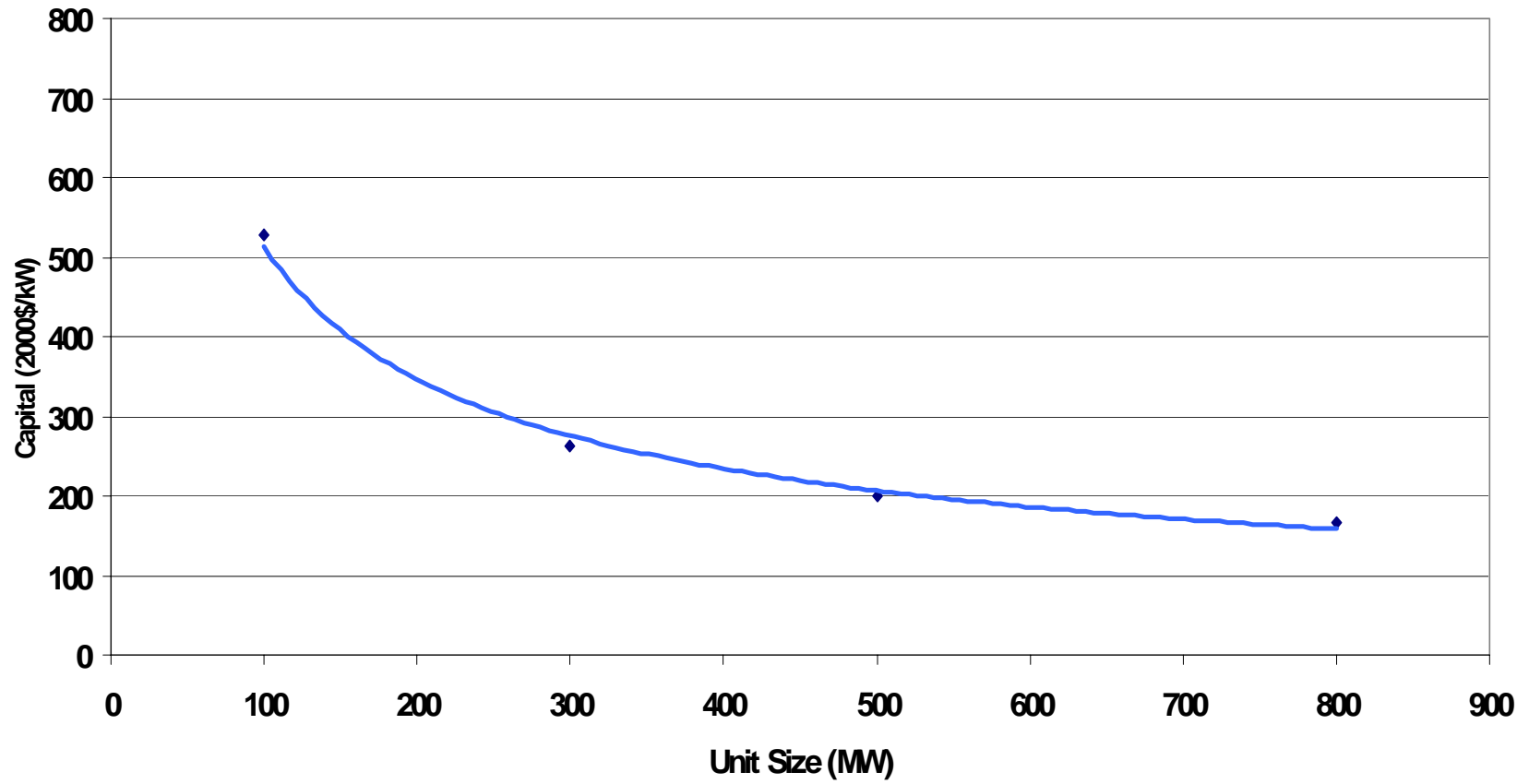
National Energy Growth Estimates

Cumulative Growth Implications



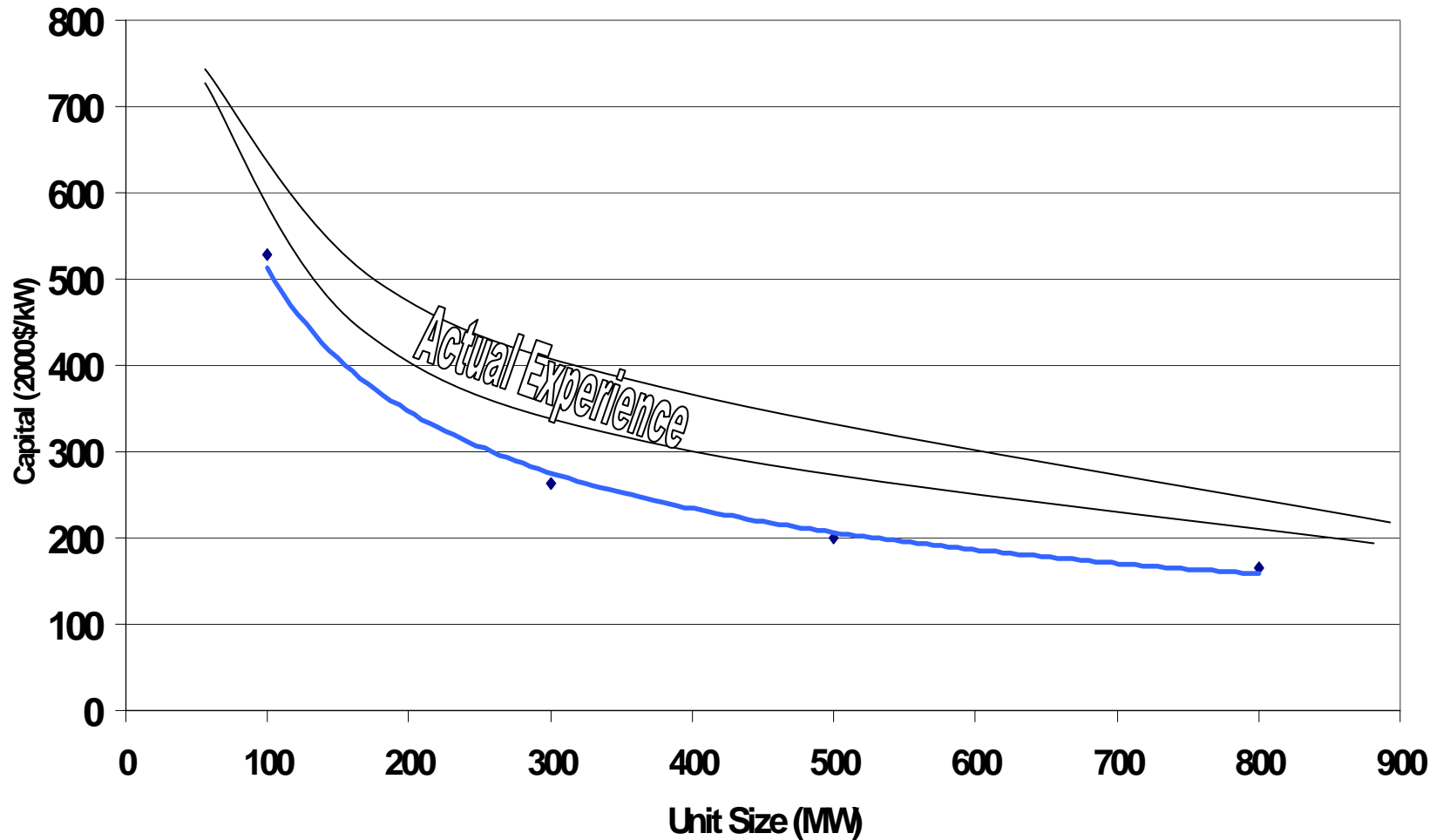
EPA SO2 Scrubber Retrofit Cost Estimate

Assumption Doc. (V2.1.6)



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IPM Recommended Next Steps

Input Assumptions

- Need to understand how the model works
 - March 10 “Get Smart” Workshop
- Need to review the ‘Global’ EGU assumptions
 - Review assumptions that are in the model now
 - Agree on assumptions that need to be changed
 - Develop process to agree on new assumptions
 - What are “SIP quality” assumptions?
- Need to review the MRPO EGU unit specific operating characteristics as well