

# One Company's Perspective on the Integrated Planning Model

For: Midwest RPO Workshop  
March 9, 2005

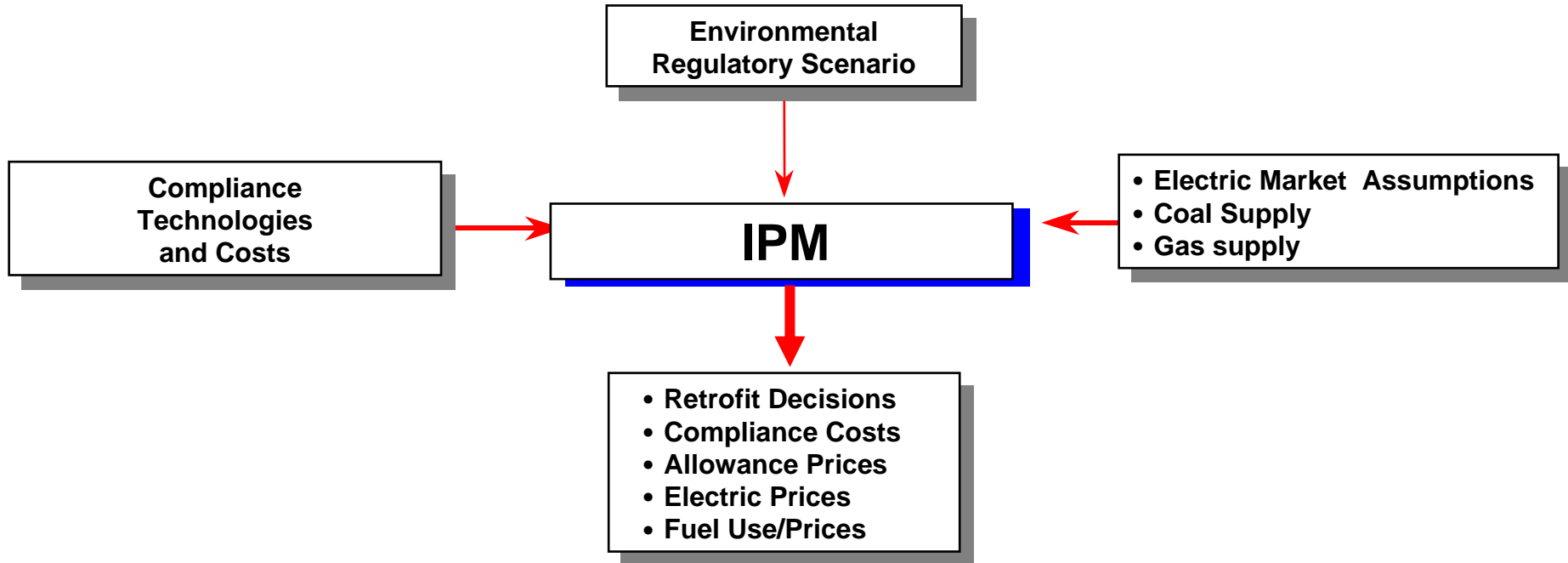
Dan Weiss, Cinergy Corp.

# 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<sub>x</sub>, SO<sub>2</sub> and Mercury Pollution Controls
    - Cost and Performance
- Unit Specific Operating Characteristics

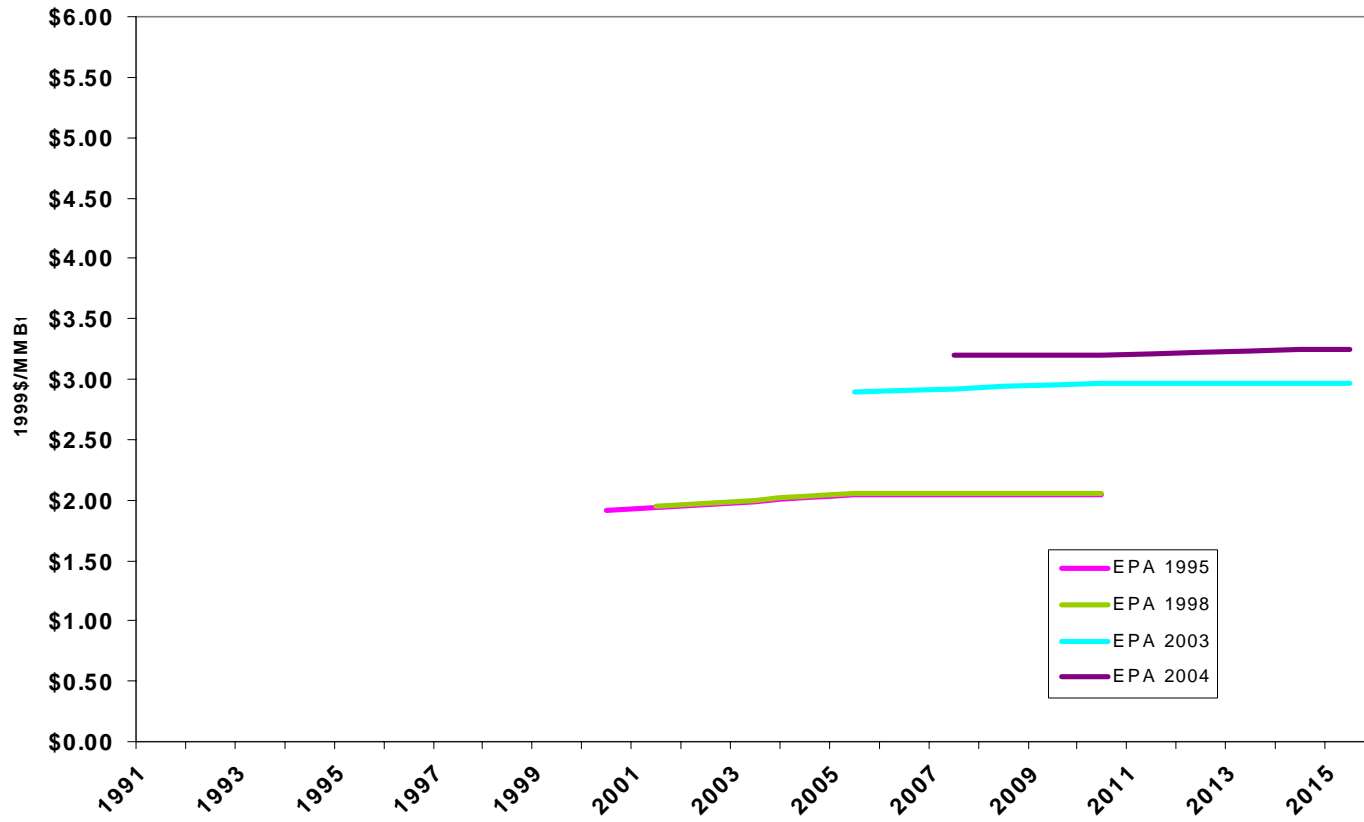
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# Fuel Price Assumptions

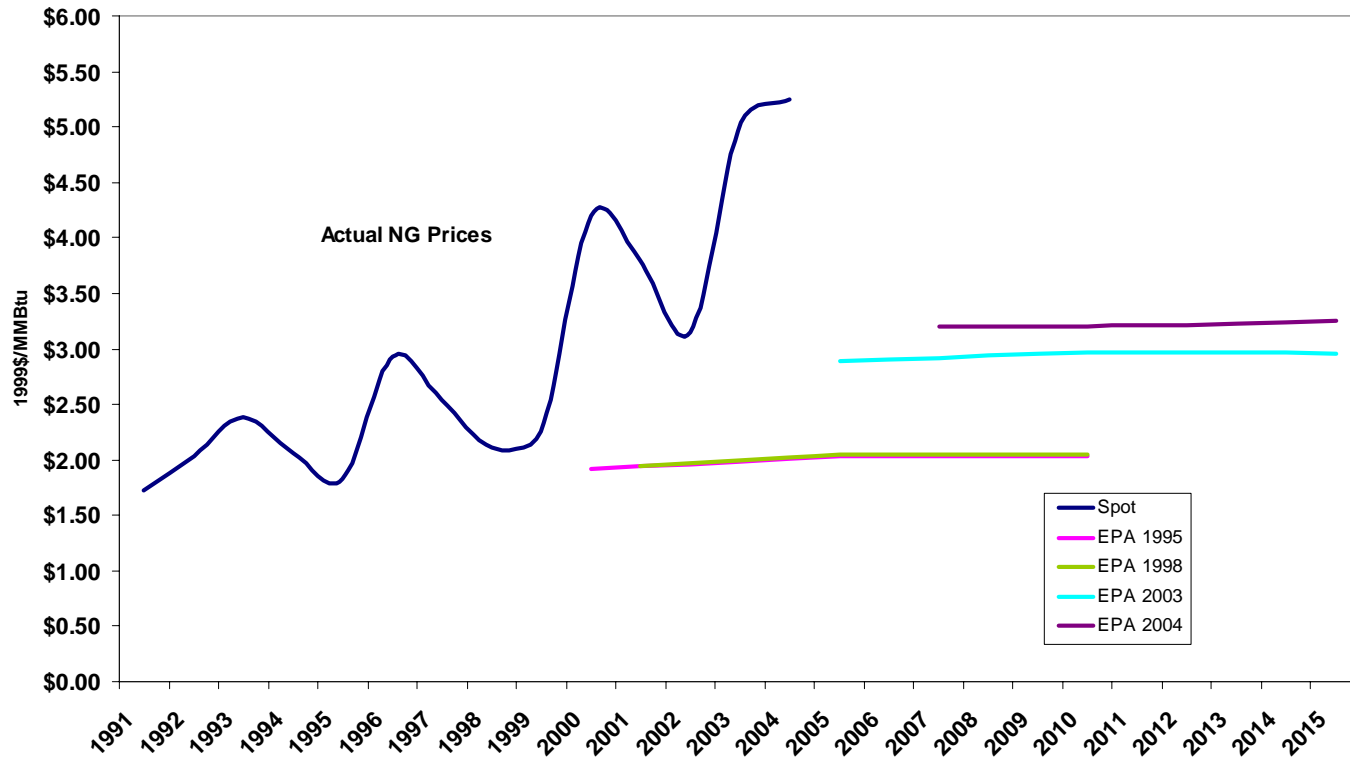
EPA Natural Gas prices over time



# Fuel Price Assumptions

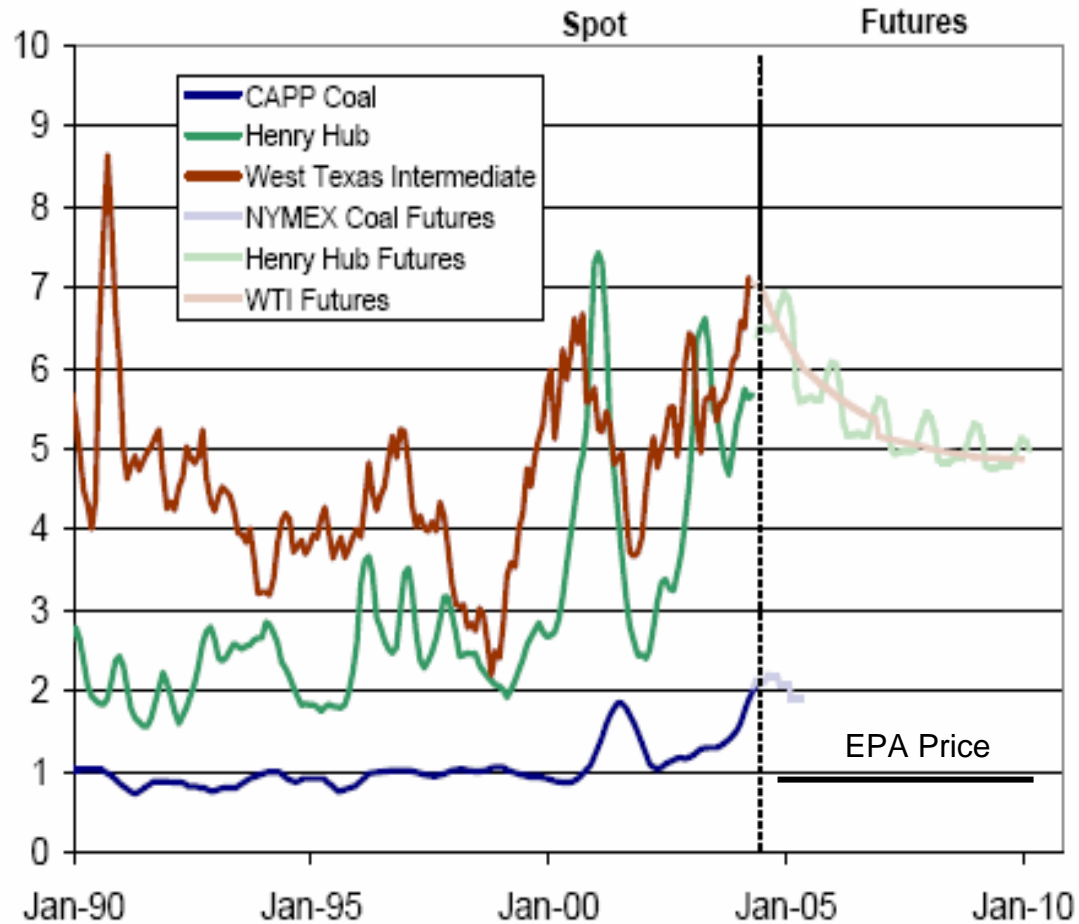
## Compared to Actual Natural Gas Prices

EPA Forecasts Have Historically Compared Poorly to Actual Prices



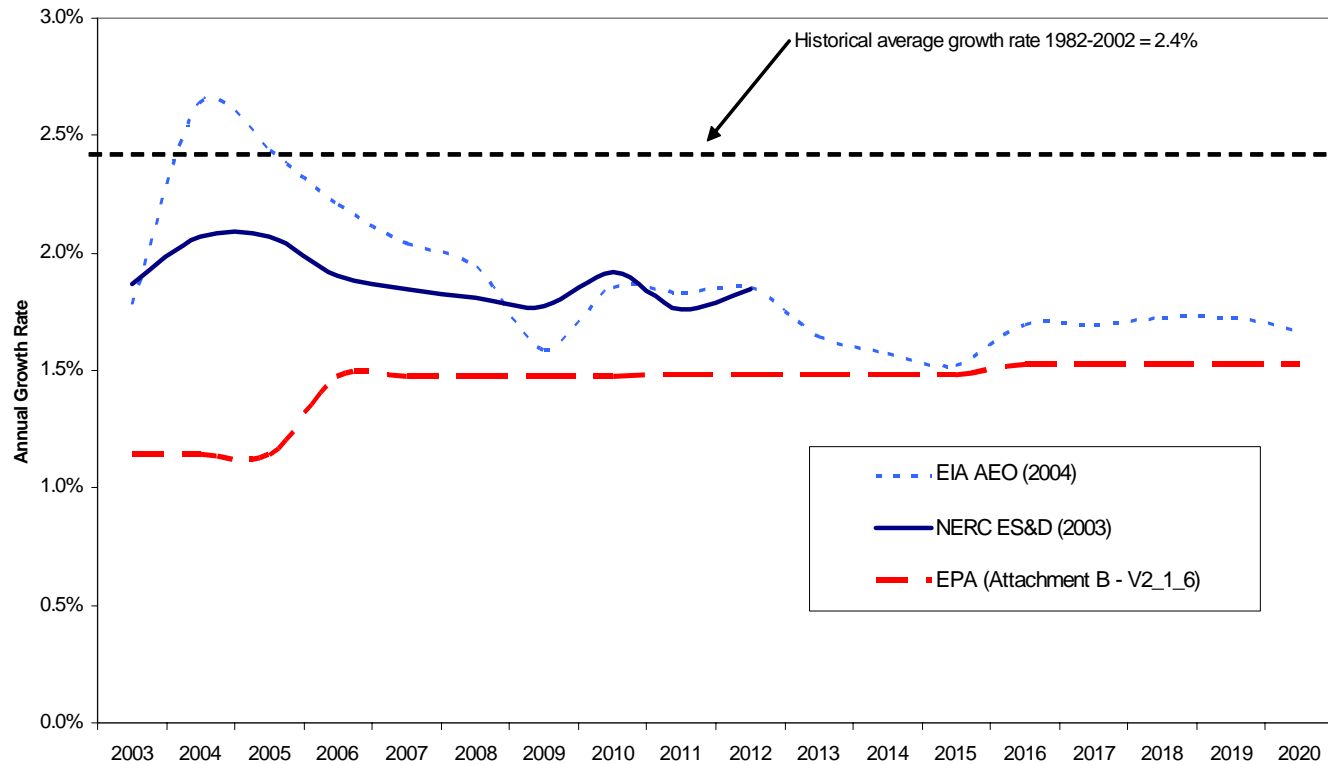
# Fuel Price Assumptions

## Coal and Natural Gas Prices



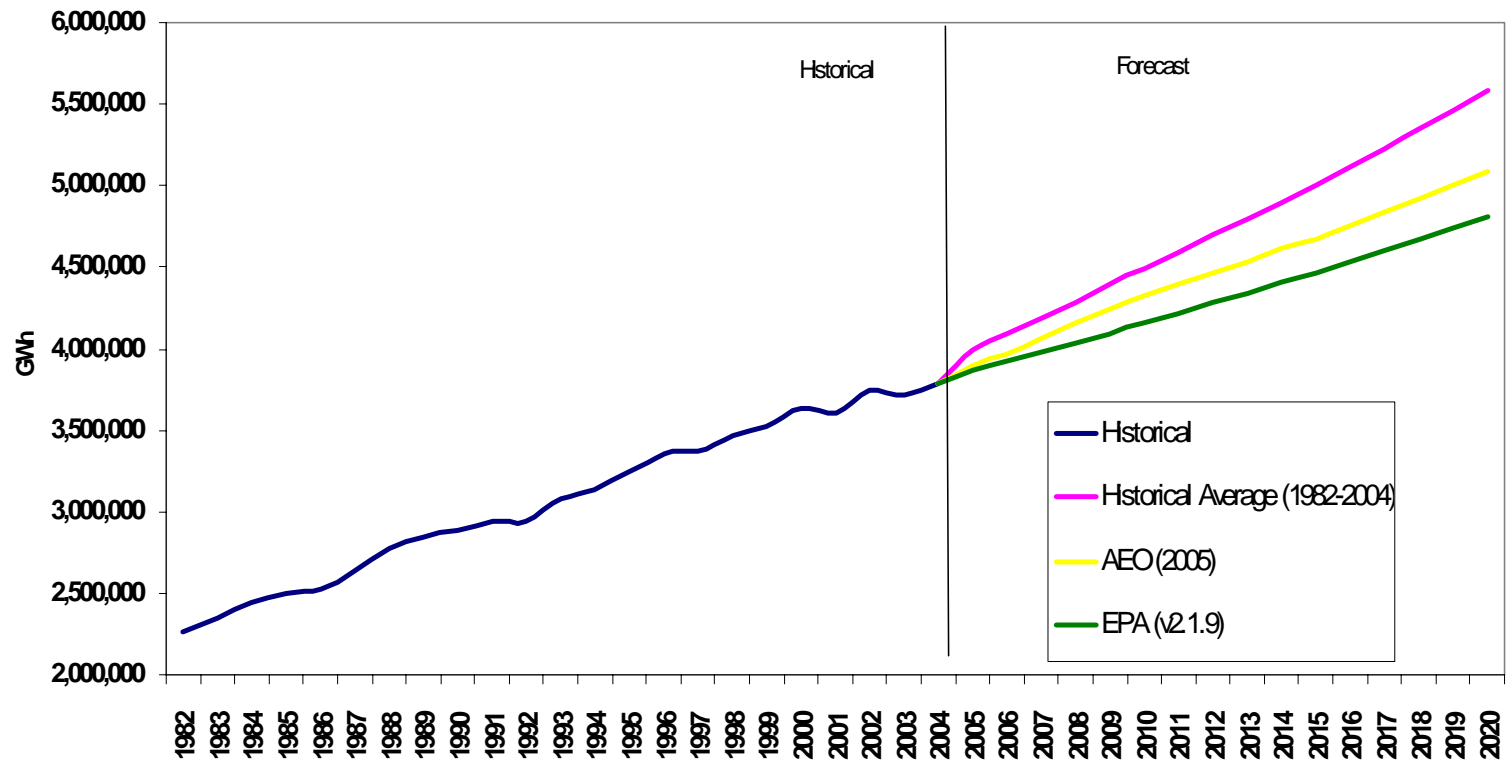
# National Energy Growth Estimates

## Annual Rate of Growth



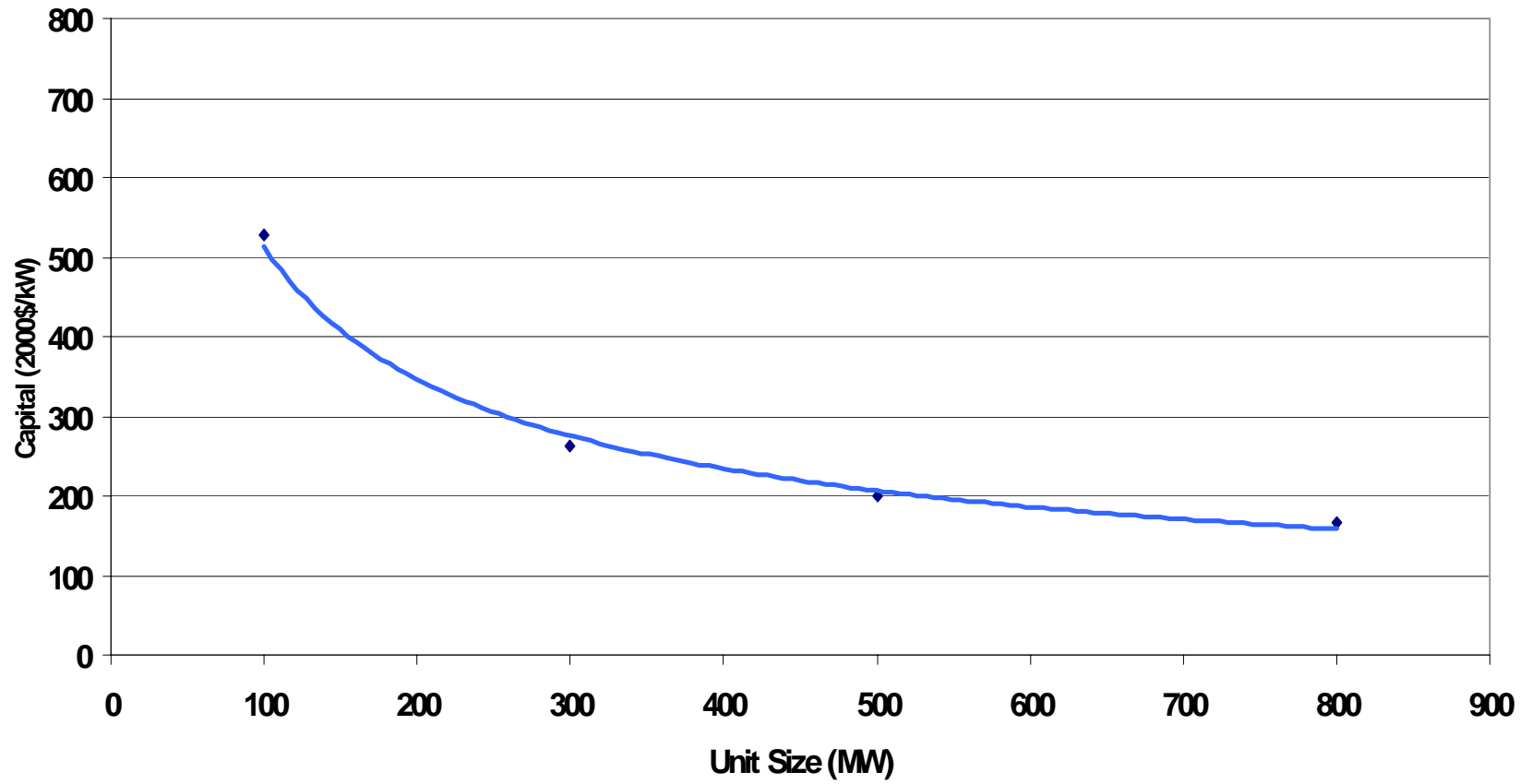
# National Energy Growth Estimates

## Cumulative Growth Implications



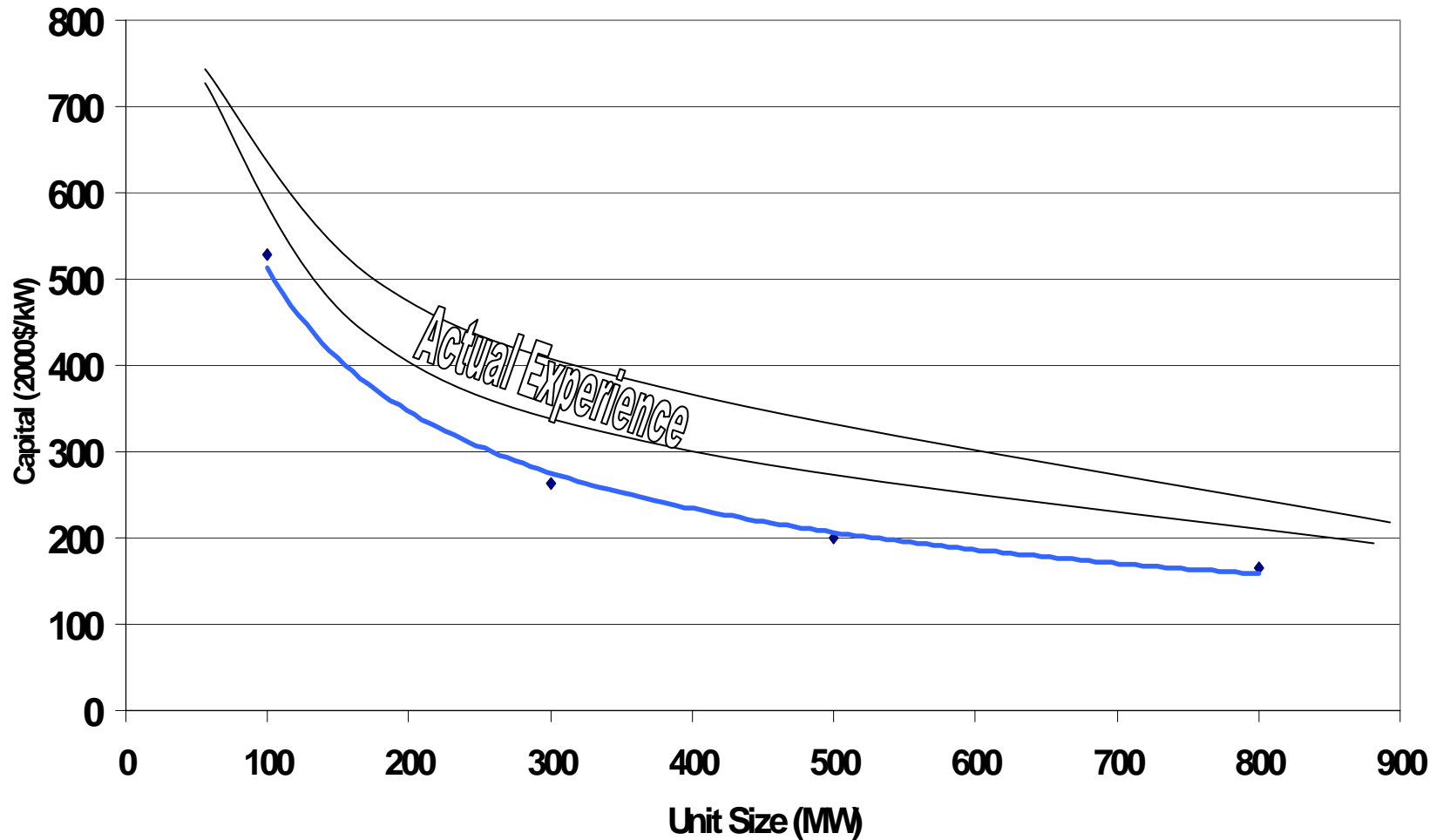
# EPA SO2 Scrubber Retrofit Cost Estimate

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