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# The Need for the Proposed Duke Energy Indiana Edwardsport IGCC Project

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On behalf of

Citizens Action Coalition, Sierra Club, Save the Valley and  
Valley Watch

1. There is no need for the capacity from Edwardsport to ensure adequate system reliability.
  - A. Circumstances have changed significantly since the CPCN was issued in November 2007.
  - B. DEI's own exhibits show that the Complete as NGCC and No IGCC scenarios each would have adequate capacity to provide for a 13.9% reserve margin.
2. The Cost of the Edwardsport Project has skyrocketed since 2007.
  - A. Is now expected to cost almost \$5,000 per kilowatt.
  - B. Would be the most expensive fossil-fired power plant ever built in U.S.
  - C. Many 'lower-cost' fossil-fired construction projects have been cancelled.

3. The results of DEI's modeling analyses show, at most, a marginal benefit in some scenarios to completing Edwardsport as an IGCC unit. In other scenarios, completing the plant as an NGCC unit is the lower cost option.
4. DEI's modeling analyses are biased by a number of unreasonable assumptions, e.g.:
  - A. Assume very high operating performance in all years in a first-of-a-kind IGCC plant at this scale.
  - B. Use very low CO<sub>2</sub> allowance costs. Allowance costs in Company's "High CO<sub>2</sub>" sensitivity case more reasonable as base case scenario.
  - C. Assume no incremental energy efficiency savings after approximately the years 2019-2021.

5. Completing Edwardsport as an IGCC plant is the riskiest option.
  - A. Potential for operating problems in first-of-a-kind unit for extended period after projected in-service date.
  - B. Potential for higher CO<sub>2</sub> prices than DEI has modeled.
  - C. Potential for significantly higher capital costs (perhaps 30% or more) if CCS required to comply with eventual regulatory regime.
  - D. Potential for further cost increases and schedule delays prior to actual in-service date.

6. Duke has grossly mismanaged its resource planning for the Edwardsport Project and has concealed the significance of higher construction costs from the IURC.
  - A. Refused to acknowledge to the IURC that “First Mover Issues” would require design, engineering and construction changes with resulting significant increases in capital costs and delay in in-service date.
  - B. Refused in 2007 and 2008 to consider scenarios in its Edwardsport economic analyses with higher plant capital costs.
  - C. Failed in late 2009 and early 2010 to conduct new economic studies after it finally recognized in the fall of 2009 that the project was going to cost more than the \$2.35 billion that the IURC had approved.
  - D. Continued to spend money on construction at a rapid rate between October 2009 and March 2010, turning to-go costs into sunk costs and trying to make the project into a self-fulfilling prophecy.

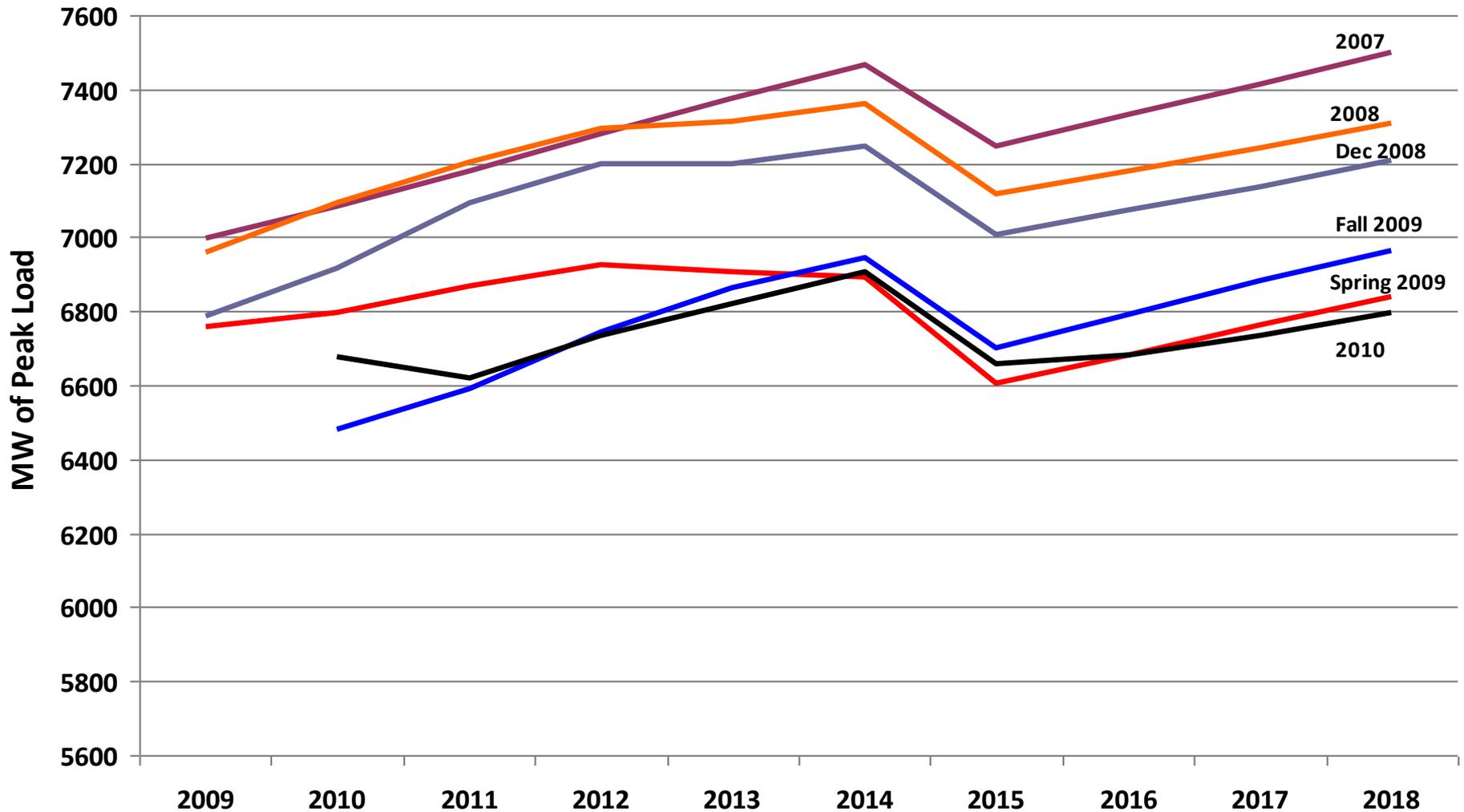
7. The proposed settlement agreement is inadequate to address these issues and would leave the Company's ratepayers exposed to very significant risks.
8. In addition, the proposed settlement would not only reimburse but would reward DEI for huge cost increases associated with the Company's failure on a timely basis to acknowledge, reflect in modeling and report to the Commission the economic implications of "First Mover Issues."

## Changed Circumstances

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- Company load forecasts have decreased significantly.
- DEI's required reserve margin has been lowered from 15-17% in 2007 to 13.9% in 2010.
- The IURC has ordered greater efforts on energy efficiency.
- DEI has recognized the potential for significantly more demand response.
- Projected natural gas prices have dropped dramatically.
- Eventual CO<sub>2</sub> regulation more certain, but precise design and timing less certain, with delayed timing implying more stringent limits on CO<sub>2</sub> emissions.
- The estimated cost of the Edwardsport Project has skyrocketed.

# Load Forecast has Decreased over Past Three Years



## Load Forecast has Decreased over Past Three Years

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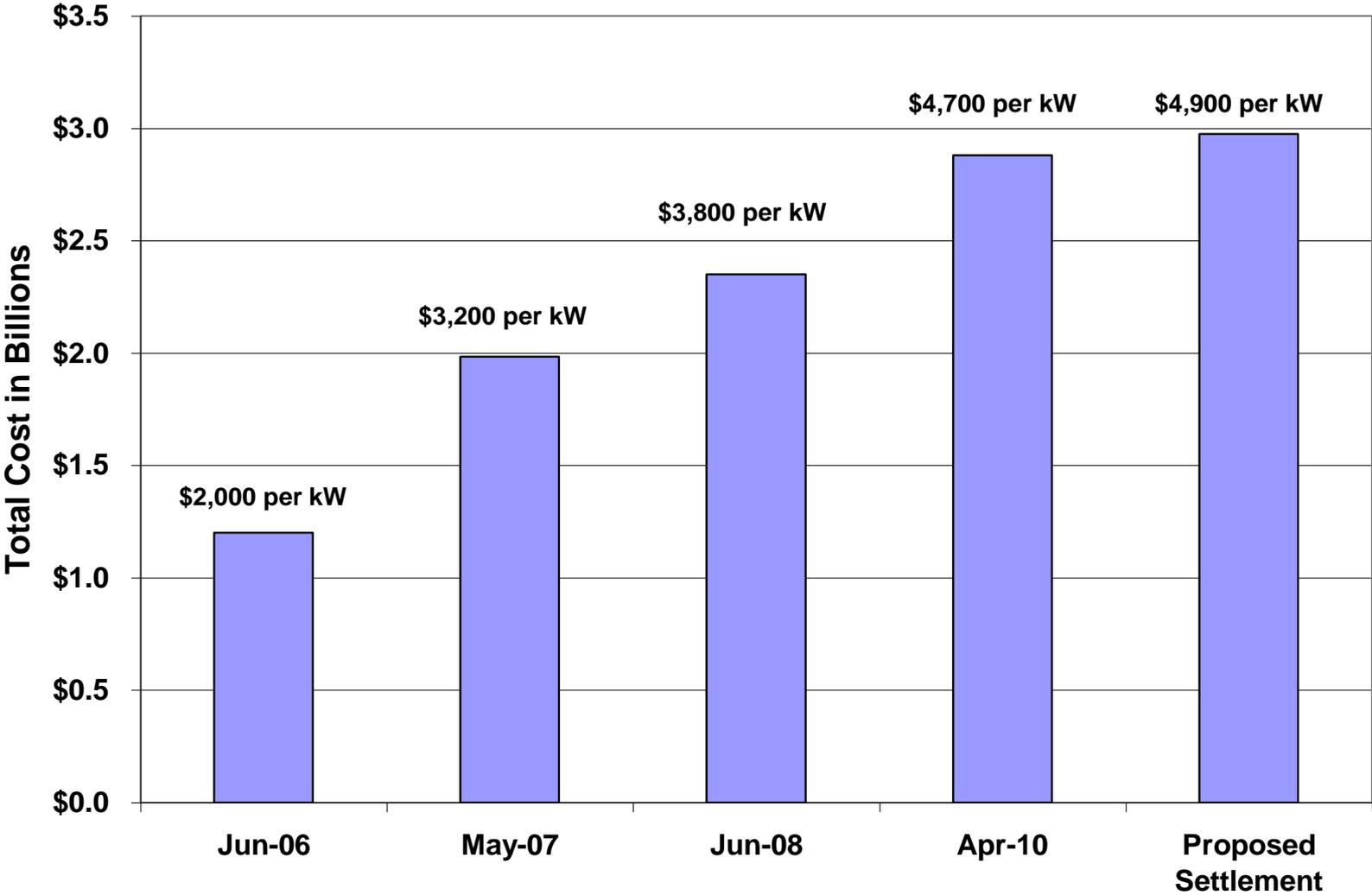
- “Need for 300 MWs to 600 MWs of baseload in 2012-2014 timeframe to maintain 15-17% reserve margin” – Presentation by Jim Stanley, June 2007.
- “DEI between 2012-2014 needs additional baseload capacity of 300 MWs to 600 MWs” – Presentation by Darlene Radcliffe, April 2009.
- “I continue to draw the conclusion that completion of the Project is the most reasonable course of action” – DEI witness Hager, October 2010.
- Thus, Company’s load forecast for 2018 has dropped from 7500 MW to 6800 MW – or 700 MW – between 2007 and 2010, but DEI still maintains that it needs 600 MW of new baseload IGCC capacity on line in 2012 at the higher cost per KW ever paid for a fossil-fired plant.

## The Cost of the Edwardsport IGCC Project has Skyrocketed

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- 140% increase in 4 years from June 2006 to April 2010.
- 45% increase in less than 2½ years from Nov. 2007 to April 2010.
- Edwardsport capital cost estimate now about \$4,700 per kW but would be higher if CWIP included.
- Edwardsport now most expensive non-nuclear central station power plant built or under-construction in U.S.

# The Cost of the Edwardsport IGCC Project has Skyrocketed



## These Cost Increases were Inevitable, Foreseeable and Foreseen

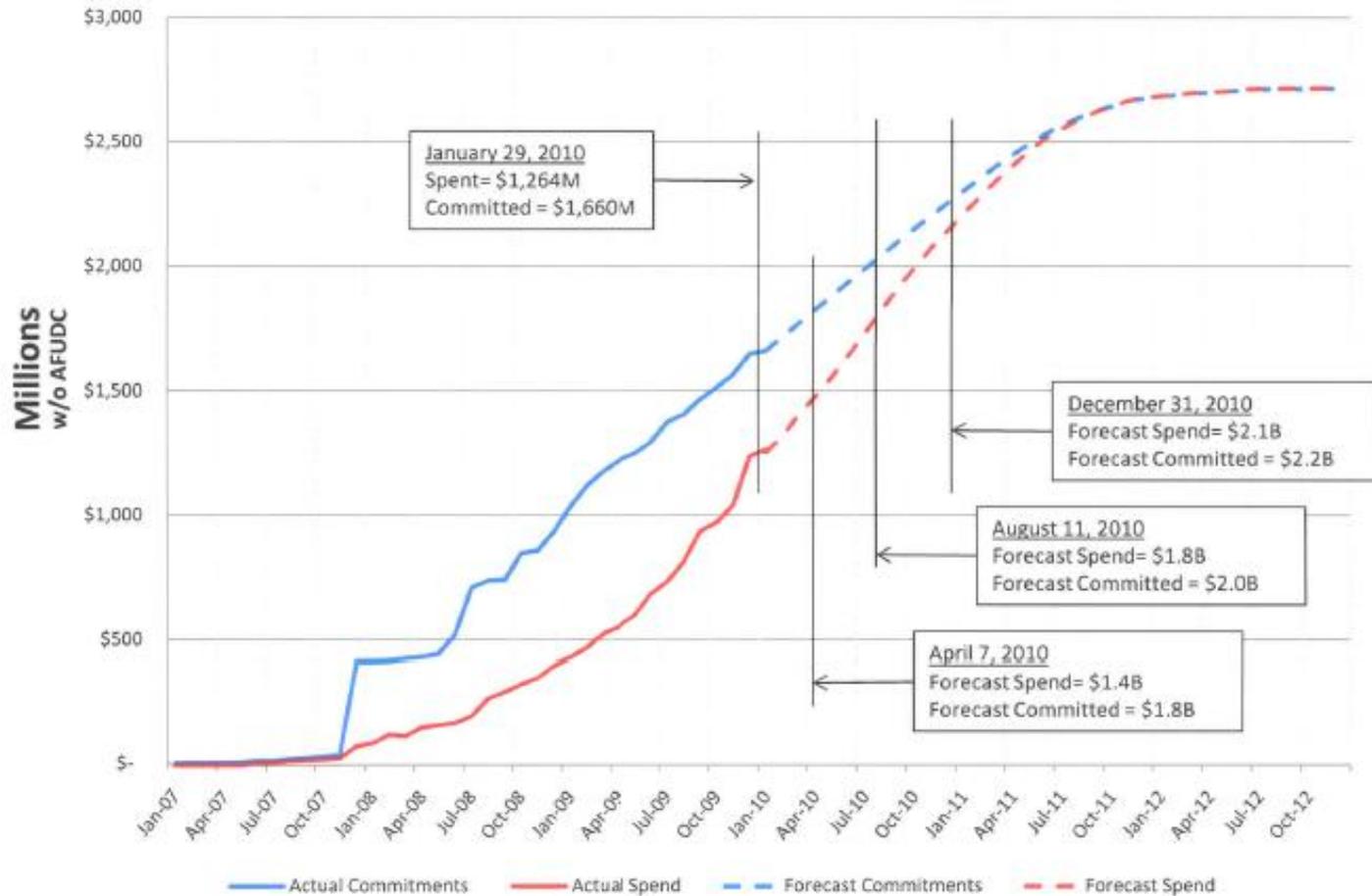
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- Industry experience beginning in about 2003 showed skyrocketing coal plant construction costs.
- Edwardsport is first-of-a-kind plant on this scale.
- Duke acknowledged risks of “First Mover Issues” in 2006 testimony in North Carolina on why it chose not to build an IGCC plant in that State.
- CAC testimony in May 2007 and July 2008 warned of potential for construction cost increases and recommended DEI consider them in economic modeling analyses.
- DEI rejected potential for significant cost increases in each proceeding and refused to look at increased capital cost sensitivities in modeling analyses.
- DEI knew by October 2009 that capital cost would exceed \$2.35 billion IURC-approved estimate but kept spending for five months without re-evaluating the need for and economics of completing Edwardsport.

# Edwardsport Spent and Committed Costs

PETITIONER'S EXHIBIT C-3  
Cause No. 43114 IGCC 4S

Edwardsport IGCC Project Forecast Commitment and Spending Curve

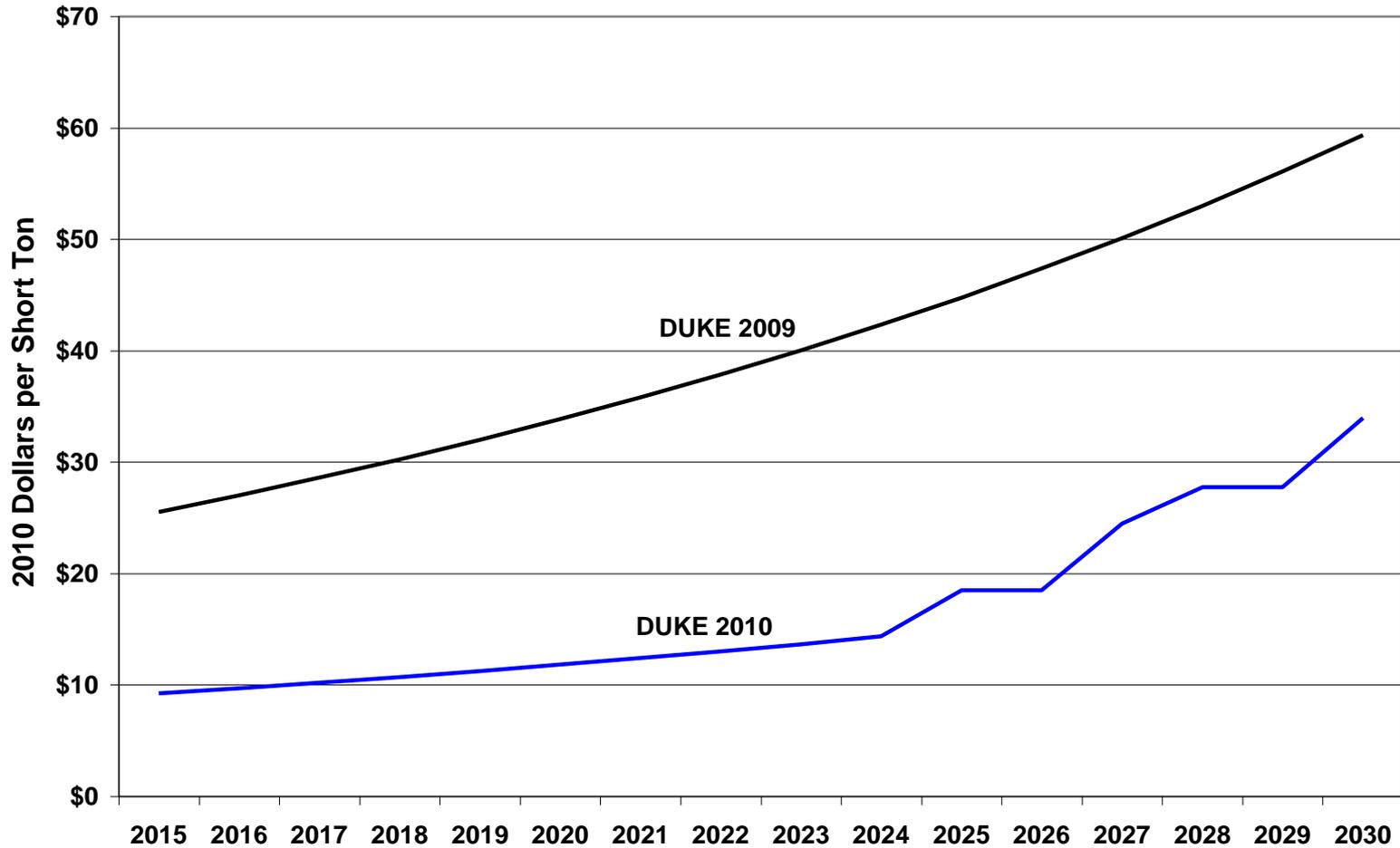


## DEI Assumes Very Low CO<sub>2</sub> Prices in its New Modeling Analyses

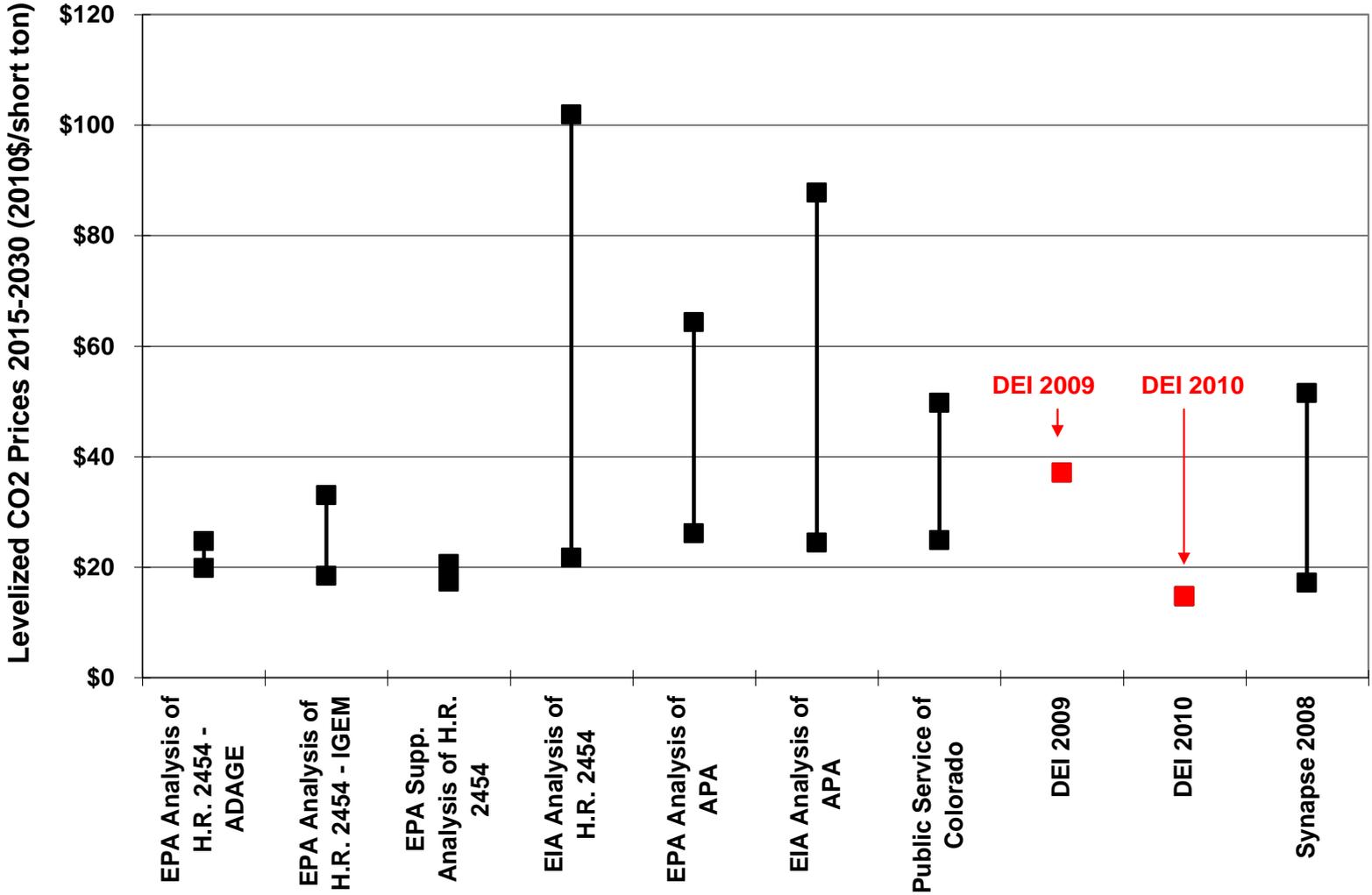
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- DEI's 2010 CO<sub>2</sub> allowance costs are more than 35% lower than Company's 2009 CO<sub>2</sub> allowance costs that it used as recently as 2009 IRP filed in Jan 2010.
- Most recent DEI modeling analyses (Exhibits BB-13 and BB-14) show that completing Edwardsport as an IGCC plant is not the lower cost option if Company's 2009 CO<sub>2</sub> allowance costs are used.
- Uncertainty as to timing and design of climate legislation may justify delaying start of CO<sub>2</sub> regulation but not dramatic reductions in allowance costs assumed by DEI.

# DEI Dramatically Lowered Its Projected CO<sub>2</sub> Prices Between 2009 and 2010



# DEI “Base Case” 2010 CO<sub>2</sub> Prices Below ‘Low Ends’ of Independent Modeling



1. The Company clearly knew, even before beginning to build Edwardsport, the significant technology risks and additional construction costs that an IGCC project necessarily presented.
2. However, the Company refused to acknowledge and analyze those risks and costs in its testimony before the IURC. Instead DEI reported to the IURC at every stage that the project risks were manageable and that its costs were under control.
3. DEI also failed to update its economic assessments of the continuing need for the project on a timely basis to reflect the much higher risks and costs to which its ratepayers actually were being exposed.
4. This course of conduct is inexcusable, especially for DEI the successor to PSI Energy with the Marble Hill and Wabash River No. 1 experiences.

5. The appropriate regulatory response to this course of conduct is to:
  - A. Revoke or modify the Edwardsport CPCN in this subdocket pursuant to IC 8-1-8.5-5.5 and 8-1-8.7-5.
  - B. Initiate an investigation into (1) whether the Company's conduct constitutes fraud, concealment, and/or gross mismanagement within the meaning of the Utility Power Plant Construction Act, and (2) if there has been fraud, concealment or gross mismanagement, the amount of costs incurred to construct the Edwardsport Project that should be disallowed for ratemaking purposes.