
**BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

**Joint Application of Wisconsin Power & Light)
Company, Wisconsin Public Service)
Corporation, and Madison Gas and Electric) DOCKET NO. 05-CE-138
Company for a Certificate of Authority to Install)
Emissions Reductions Systems at the Columbia)
Energy Center Units 1 and 2)**

**SUPPLEMENTAL DIRECT TESTIMONY
OF DAVID A. SCHLISSEL
ON BEHALF OF
JOHN MUIR CHAPTER OF THE SIERRA CLUB**

OCTOBER 9, 2009

List of Exhibits

Exhibit 429(DAS-16) Public EGEAS Analyses Planning Matrix Results for Intervenor
Futures

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1 **Q. What is your name, position and business address?**

2 A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy
3 Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

4 **Q. What is the purpose of this Supplemental Direct Testimony?**

5 A. I am presenting the results of some additional EGEAS runs that the Applicants
6 undertook in response to Intervenor requests.

7 **Q. Please describe the additional scenarios that Intervenors asked the**
8 **Applicants to examine in new EGEAS runs.**

9 A. Intervenors asked the Applicants to examine two new Futures (Nos. 11 and 13)
10 with the four original Plans plus a Plan #7.

11 Future No. 11 asked the Company to modify its Future #5 in the following ways:

- 12 • Use the natural gas price forecast developed by LaCapra witness Hahn
- 13 • Use the Synapse Mid CO₂ Price Forecast
- 14 • Move the first year of CO₂ monetization from 2015 to 2013
- 15 • Add DSM as a resource equal to 2% of sales beginning in 2012
- 16 • Lower the biomass capital cost to \$4,000 per kW
- 17 • Decrease the biomass fuel cost to \$4.00 per MMBtu
- 18 • Start SO₂ allowances prices at \$65/ton decreasing over time to \$28/ton.

19 Future No. 13 asked the Company to modify its Future #5 in the following ways:

- 20 • Use the Applicants' gas price forecast increase by 10 percent to reflect
21 greenhouse gas regulation instead of the 30 percent assumed by the
22 Applicants
- 23 • Use the Synapse Mid CO₂ Price Forecast

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- 1 • Move the first year of CO₂ monetization from 2015 to 2013
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- 4 • Decrease the biomass fuel cost to \$4.00 per MMBtu
- 5 • Start SO₂ allowances prices at \$65/ton decreasing over time to \$28/ton.

6 Q. Please describe the new Plan that the Applicants included in their new EGEAS
7 runs.

8 A. Plan #7 started with Future 5 and then assumed:

- 9 • That Hg ACI/BH would be installed on both units on January 1, 2015; decreasing the
10 capacity of each unit by 4 MW and increasing their heat rates by 57 BTU/kWh
- 11 • The Columbia units would not be retired in 2018 and instead were retired in whatever
12 year the Companies assumed for Plan 1.
- 13 • The following units would be retired on December 31, 2014:
 - 14 ○ WPL – Nelson Dewey 1&2 – 222.4 MW
 - 15 ○ WPS – PUL 5&6 – 121 MW
- 16 • All sunk and decommissioning costs were removed from the calculation of Columbia
17 Station revenue requirements (and sunk costs from the Nelson Dewey or PUL units also
18 were not included).

19 Q. **What were the results of the Applicants' new EGEAS runs?**

20 A. The results of the Applicants' new EGEAS runs are presented in Exhibit 429
21 (DAS-16). These results show:

- 22 • In each of the new Futures examined, delaying the installation of the FGD
23 until 2018 (Plan 3) is a lower cost option that proceeding with adding the
24 controls as the Applicants have proposed (Plan 1 or Plan 2).
- 25 • With the LaCapra natural gas prices, Plan 4, early retirement of Columbia
26 Units 1 and 2 in 2013, has a lower NPV cost than Plan 1 and Plan 2.

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- 1 • With the Applicants’ natural gas prices increased by an additional 10
2 percent, Plan 4 is more expensive than Plan 1 or Plan 2.
- 3 • Plan 7 is a lower cost option in both Futures 11 and 13—the only Futures
4 for which it was modeled.

5 **Q. Do the modeling results presented in Exhibit 429 (DAS-16) include the sunk**
6 **costs for the Columbia, Nelson Dewey and PUL units?**

7 A. Yes. The public modeling results presented in Exhibit 429 (DAS-16) do include
8 the sunk costs for those units. In other words, they have not been removed.

9 **Q. Do you believe that the results of the Future 13 EGEAS runs persuasively**
10 **demonstrate that installation of the emission controls would be a lower cost**
11 **and less risky alternative for the Applicants’ ratepayers than the retirement**
12 **and replacement of Columbia Units 1 and 2 would be?**

13 A. No. In Future 13, Plan 4 would be only 1.4 percent more expensive than Plan 1
14 and would be only 0.6 percent higher than Plan 2 (the plan that installs an SCR in
15 addition to a scrubber on each unit). These are relatively minor differences given
16 the substantial uncertainties of projecting such factors as loads and resources and
17 power plant capital and operating costs over a nearly thirty year period.
18 Moreover, there are also a number of factors which lead me to believe that the
19 relative economic benefits of Plans 1 or 2 versus Plan 4 are overstated in Future
20 13.

21 First, as discussed by Staff witness Detmer, as part of the EGEAS modeling
22 process, it is important to look at the current economic downturn and its effect on
23 the Applicants’ forecast sales and peak demands.¹ The Applicants do not appear
24 to have revised the forecasted loads and energy sales assumed in their EGEAS
25 modeling for Futures 11 or 13 to reflect the current economic downturn. It is

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1 reasonable to expect that this will affect the relative economics of Plan 4 versus
2 Plans 1 and 2.

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5 Second, as I have discussed in my September 25, 2009 Direct Testimony, there is
6 no persuasive modeling evidence that regulation of greenhouse gas emissions
7 would increase natural gas prices over any extended period, let alone by 10
8 percent in every year of the analysis beginning in 2013. Even though Future 13
9 assumes that regulation of greenhouse gas emissions would increase natural gas
10 emissions by 10 percent instead of the far higher 30 percent assumed by the
11 Applicants in their earlier EGEAS analyses (Futures 5 through 10), I believe that
12 even the 10 percent assumed increase in natural gas prices used in Future 13
13 overstates the impact that federal greenhouse gas regulation will have.

14 Third, the base natural gas prices used by the Applicants in the EGEAS runs are
15 much higher than other gas price forecasts we have seen in recent months. These
16 high base natural gas prices bias the Applicants' modeling analyses in favor of
17 continued operation of Columbia Units 1 and 2.

18 Finally, the Applicants' new EGEAS runs did not examine the relative economics
19 of the various plans under a higher set of CO₂ price forecasts such as Synapse's
20 High CO₂ prices. Use of these higher CO₂ prices certainly would significantly
21 reduce, or perhaps even eliminate, any NPV benefit for Plans 1 and 2 shown in
22 Exhibit 429 (DAS-16)

23 For these reasons, I would not recommend that the Commission give much, if
24 any, weight to the results of the Future 13 comparisons between Plan 4 and Plans
25 1 and 2 presented in Exhibit 429(DAS-16)

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1 **Q. Do the modeling results for Plan 7 support a conclusion that the Commission**
2 **should deny the current application and require the Applicants to analyze**
3 **new alternatives that include retirement of smaller and/or less efficient**
4 **existing coal units as a way to comply with CAIR, visibility, mercury, and**
5 **other pollutant regulations?**

6 A. Yes. As the model results for Plan 7 show that there is at least one scenario that
7 involves retiring smaller and/or less efficient units is comparable or less costly
8 than installing the proposed pollution controls on Columbia 1 and 2. It is
9 reasonable to expect that there may be other scenarios, involving combinations of
10 retirements and natural gas repowering of those units, would provide more
11 options for lower cost reductions in multiple pollutants, including greenhouse
12 gases.

13 **Q. Does this complete your Supplemental Direct Testimony?**

14 A. Yes.

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