

1 scenarios due primarily to the life extension costs that would be required to operate
2 Ghent 2 through 2050.

3

4 **IV. CRITIQUES OF THE JOINT INTERVENORS' MODELING**

5 **Q. Have you reviewed the resource modeling presented by Ms. Sommer and the**
6 **workpapers associated with the two alternative portfolios she developed?**³⁹

7 A. Yes.

8 **Q. Please summarize her analysis.**

9 A. First, as I explained earlier, the Companies' analysis was completed in three stages.
10 After developing the economically optimal portfolio for meeting minimum reliability
11 in Stage One, the Companies compared that portfolio to a wide variety of other
12 portfolios in Stage Two. Ms. Sommer did not present any modeling results that
13 disagreed with the Companies' economically optimal portfolio. Rather, like the
14 Companies did in their Stage Two analysis, Ms. Sommer developed two alternative
15 portfolios by introducing additional modeling constraints and new energy efficiency
16 programs based on Mr. Grevatt's testimony.

17 **Q. How did Ms. Sommer model the new energy efficiency programs?**

18 A. In PLEXOS, Ms. Sommer modeled the energy efficiency programs as a reduction to
19 load in years 2025 through 2040. To do this, she applied load reductions up to 1.62
20 percent, as shown in Table 2, using the same percentage reduction in all hours of each
21 year. In her financial models, she assumed a non-escalating nominal cost for the
22 programs of \$30/MWh in all years. In SERVVM, Ms. Sommer modeled the 2028 hourly

³⁹ Sommer at 25-35.

1 for economics and practicability, but it was not included in their PLEXOS modeling,
2 which was an oversight. Regardless, this cost should clearly be included when the wind
3 PPA is included in a modeled portfolio like Ms. Sommer's.

4 **Q. What impact does adding the omitted transmission costs have on Ms. Sommer's**
5 **analysis?**

6 A. When Ms. Sommer's financial model is updated to include the omitted transmission
7 costs, the PVRR increases by \$186 million. This update alone changes the claimed
8 \$104 million NPVRR benefit of her "Renewables Plus One NGCC" portfolio in the
9 30% increased capital cost case to being \$82 million NPVRR more expensive than the
10 Companies' proposed portfolio.

11 **Q. What is another concern you have regarding Ms. Sommer's modeled portfolios?**

12 A. As I discussed above, Ms. Sommer included a significant amount of additional energy
13 efficiency savings in her modeled portfolio at a levelized cost of \$30/MWh.⁴²
14 Regardless of the reasonableness of assuming such savings (I noted my concerns about
15 them above), Ms. Sommer provides no justification for assuming them only in her
16 selected portfolios and not the Companies' portfolio, and I am unaware of any reason
17 why they should not be applied to the Companies' portfolio if they are to be assumed
18 for Ms. Sommer's portfolio. Indeed, the Joint Intervenors recommend that the
19 Commission "[m]odify and approve an expanded portfolio of DSM/EE, as
20 recommended by Witness Grevatt";⁴³ if the Commission did so, the Joint Intervenors'
21 claimed savings would presumably apply regardless of the approved supply-side
22 portfolio. As I show in Table 4 below, adding these savings results in a reduction to

⁴² See Joint Intervenors' Response to Companies' DR 21.

⁴³ McDonald Corrected Testimony at 4.

1 effect of my concerns with Ms. Sommer’s modeling of detailed production costs using
2 PLEXOS.

3 **Q. What are your concerns with Ms. Sommer’s modeling of detailed production costs**
4 **using PLEXOS?**

5 A. Table 3 compares production costs from PROSYM through 2030 to the production
6 costs Ms. Sommer developed using PLEXOS for the Companies’ recommended
7 portfolio. While PLEXOS is a proven tool for computing detailed production costs,
8 the Companies have not calibrated its inputs and settings for this purpose. For example,
9 for portfolio screening, PLEXOS necessarily utilizes a simplified heat rate curve to
10 dispatch thermal units and estimate fuel costs. However, Ms. Sommer inappropriately
11 used the same simplified heat rate curve to model detailed production costs. In
12 addition, the Companies capture the cost of SCCT starts in PROSYM, but these costs
13 are modeled as shadow costs in PLEXOS such that they impact dispatch decisions but
14 not production costs. Ms. Sommer should have configured PLEXOS to include the
15 cost of SCCT starts when computing detailed production costs. The fact that the
16 production costs from Ms. Sommer’s PLEXOS modeling are consistently lower than
17 PROSYM is concerning from a modeling perspective.

18 **Table 3: Production Cost Differences (Companies Recommended Portfolio; \$M)**

Year	PROSYM	PLEXOS	Difference (PROSYM less PLEXOS)
2023	875	842	33
2024	928	896	32
2025	1,008	974	34
2026	1,074	1,041	33
2027	1,091	1,057	34
2028	1,095	1,047	48
2029	1,099	1,055	45
2030	1,109	1,069	40

19

1 **Q. What is the impact of using PROSYM for detailed production cost modeling on**
2 **Ms. Sommer’s analysis of the Companies’ recommended portfolio and her**
3 **“Renewables Plus One NGCC” portfolio?**

4 A. Table 4 below shows the results of the impact of using PROSYM for detailed
5 production cost modeling on Ms. Sommer’s analysis of the Companies’ recommended
6 portfolio and her “Renewables Plus One NGCC” portfolio. The first line of the table
7 begins with the PVRR difference between the portfolios according to Ms. Sommer, i.e.,
8 it shows the “Renewables Plus One NGCC” portfolio as having a \$104 million lower
9 PVRR than the Companies’ portfolio. In the second line of the table, the Companies
10 add the \$186 million PVRR impact of including transmission cost for the wind resource
11 in the “Renewables Plus One NGCC,” which cost Ms. Sommer had omitted.

12 The third through fifth lines of the table reflect the Companies’ use of PROSYM
13 to model their proposed portfolio and the “Renewables Plus One NGCC” portfolio.
14 Note that the Companies modeled their proposed portfolio in PROSYM as Ms. Sommer
15 modeled it in PLEXOS, including the RFP resources Ms. Sommer added to her
16 portfolio and the Companies’ portfolio after 2040.

17 The third line of the table reflects the PVRR difference between modeling the
18 portfolios in PROSYM versus PLEXOS. Based on Ms. Sommer’s analysis using
19 PLEXOS, annual production costs for her portfolio were higher than the Companies’
20 portfolio. This difference is slightly greater with the Companies’ calibrated model
21 (PROSYM), resulting in a \$211 NPVRR increase in the relative cost of Ms. Sommer’s
22 portfolio.