

PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

Annual Review of Base Rates for Fuel
Costs for Duke Energy Progress, LLC }
Docket No. 2018-1-E }

**Surrebuttal Testimony of
Devi Glick**

**On Behalf of
South Carolina Coastal Conservation League and Southern Alliance for
Clean Energy**

**On the Topic of
Annual Review of Base Rates for Fuel Costs for Duke Energy Progress,
LLC**

June 4, 2018

1 **Q. Please state your name and business address for the record.**

2 A. My name is Devi Glick. I work at Synapse Energy Economics, Inc., located at
3 485 Massachusetts Avenue in Cambridge, Massachusetts.

4 **Q. On whose behalf are you testifying in this proceeding?**

5 A. I am testifying on behalf of the South Carolina Coastal Conservation League
6 (CCL) and Southern Alliance for Clean Energy (SACE).

7 **Q. What is the purpose of your surrebuttal testimony in this proceeding?**

8 A. The purpose of my testimony is to discuss the rebuttal testimony of Glen Snider
9 on behalf of Duke Energy Progress (DEP), in response to my direct testimony in
10 this docket.

11 *Avoided T&D Capacity Costs*

12 **Q. On page 4 of his rebuttal testimony, Witness Snider states that Net Energy**
13 **Metered (NEM) Distributed Energy Resource (DERs) do not avoid any**
14 **transmission or distribution investments by the Company. Are you satisfied**
15 **with this assessment?**

16 A. No. Witness Snider asserts that NEM DERs do not avoid investments related to
17 transmission or distribution.¹ However, his rebuttal testimony focuses only on
18 avoided distribution investments. He makes no specific mention of avoided
19 transmission capacity, which is the focus of my analysis and recommendations in
20 my direct testimony² with regards to the Transmission and Distribution (T&D)
21 Capacity avoided cost component.

¹ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 4.

² Direct Testimony of Devi Glick, Docket No. 2018-1-E, at pages 5-11.

1 **Q. On pages 4 and 5 of his rebuttal testimony, Witness Snider discusses the**
2 **intermittency of solar, and its purported inability to reliably align with peak**
3 **as the primary reason for assigning avoided T&D capacity an avoided cost of**
4 **zero. Do you agree with this assessment?**

5 A. No I do not. First, Witness Snider’s argument focuses on the relationship between
6 intermittency and distribution planning. When he states that “Planners have no
7 guarantee that a solar NEM will be producing coincident with the peak demand
8 needs of a circuit”³ he is referring to the distribution system rather than the
9 transmission system. Because solar photovoltaic (PV) DERs are distributed across
10 many circuits in the distribution system, the set of PV DERs act as a larger
11 generator with a smooth generation profile when aggregated. Witness Snider fails
12 to consider that the transmission system interacts with the aggregation of all
13 DERs in the region, and that the aggregation does not show the dramatic variation
14 seen on individual DERs.

15 On page 6 of his testimony, Witness Snider shows a solar profile from May 22,
16 2018 to illustrate the intermittency of solar. This example is misleading and
17 problematic for several reasons. First, the temperature only reached a high of 85
18 degrees Fahrenheit on this day, and it was rainy.⁴ Neither of these conditions are
19 typical during a summertime peak system load. Additionally, this is a single PV
20 generator. Across DEP’s system, distributed PV production will vary based on
21 highly localized factors such as cloud cover. Localized factors only impact a
22 small portion of the system at any time, however, as mentioned above, when
23 system production is aggregated over a larger area, the variability actually
24 smoothens out, making distributed PV even more predictable and reliable than a
25 comparative centralized resource.

26 Finally, DEP assigns solar a generating capacity credit to solar in its Integrated
27 Resource Plan (IRP) (44% of nameplate in summer, 5% of nameplate in winter)

³ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 5, lines 2-3.

⁴ Weather Underground result for Colombia SC, on May 22, 2018, *available at*
https://www.wunderground.com/history/airport/KCAE/2018/5/22/DailyHistory.html?req_city=&req_state=&req_statename=&reqdb.zip=&reqdb.magic=&reqdb.wmo=.

1 because it is expected that solar PV will provide some generating capacity during
2 times of peak demand.⁵ Because transmission peak requirements are consistent
3 with generation peak requirements, distributed PV should be credited with this
4 value.

5 **Q. Do you have any other concerns with Witness Snider’s Rebuttal?**

6 A. Yes. In my direct testimony and exhibits I provide multiple examples and
7 descriptions of methods for calculating avoided T&D capacity. Witness Snider
8 did not address these methods of quantification in his rebuttal testimony and
9 failed to explain why the Company is unable or unwilling to use one of these
10 methods to quantify a non-zero value for the avoided transmission component of
11 T&D capacity. Additionally, the concerns that Witness Snider discussed with
12 coincidence, intermittency, nondispatchability and uncertainty in NEM DER
13 locations and quantity all would have been present in 2014 when the Company
14 agreed to a NEM DER valuation framework that included avoided T&D capacity
15 as a component. This component is presently quantifiable, and DEP has had
16 ample time to conduct the necessary studies and analysis needed to quantify the
17 cost consistent with the 2014 NEM DER settlement agreement, which allows for
18 placeholders to be used until components can be “reasonably quantif[ied].”⁶

19 **Q. What is your recommendation with regards to the avoided T&D capacity**
20 **costs?**

21 A. DEP has made no specific objections to the methodology I used to calculate the
22 avoided transmission capacity costs. I maintain my recommendation that the
23 Commission adopt the avoided T&D capacity value of \$0.005778/kWh as
24 outlined in my Direct Testimony.⁷

⁵ Duke Energy Progress, 2017 Integrated Resource Plan Annual Report, Docket No. 2017-8-E, at page 22.

⁶ Settlement Agreement, Docket No. 2014-246-E, at pages 4-5, paragraph III.8.

⁷ Direct Testimony of Devi Glick, Docket No. 2018-1-E, at page 10, line 10.

1 *Avoided Environmental Costs*

2 **Q. In his rebuttal testimony, Witness Snider discusses DEP’s commitment to**
3 **converting all remaining operating coal plants to dry ash handling by the end**
4 **of this year.⁸ How does this statement impact your assessment of the risk of a**
5 **leak from a coal ash impoundment?**

6 A. The conversion of all coal facilities from wet ash to dry ash handling, and
7 subsequent plan to use lined dry landfills for disposal, eliminates the concern that
8 incremental coal ash disposal will increase the risk of leak from an existing wet-
9 ash impoundment. This is a positive step by DEP to reduce the impact of coal ash
10 waste, and if this conversion happens by the end of the year, I agree that the
11 marginal impact of NEM DER on leak-risk will be very low.

12 However, in the time between now and the conversion, and in the event of a delay
13 in the conversion process, there will continue to be risks associated with DEP’s
14 continued production of wet coal ash.

15 If the Commission accepts DEP’s explanation that the wet to dry conversion
16 removes most cost and risks associated with coal ash disposal, I recommend they
17 make this decision to value “leak risk value” at zero contingent upon DEP
18 completing this conversion process by the end of the calendar year.

19 **Q. On page 7 of his testimony, Witness Snider states that the variable operating**
20 **costs associated with coal ash disposal are included within the avoided energy**
21 **component of NEM DER. Are you satisfied with this treatment of variable**
22 **coal ash disposal costs?**

23 A. No. To the extent that DEP is including the handling costs of coal ash in the
24 avoided energy calculation, the Company should separately state or break out the
25 value and represent it transparently for the Commission and intervenors as an
26 avoided environmental cost. The Company already separately reports avoided
27 criteria pollutants. For transparency, coal ash handling costs should similarly be
28 reported separately in the avoided environmental cost category. At a minimum,

⁸ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 4.

1 the 2014 NEM settlement requires a clearer indication for any avoided
2 environmental costs that are included in the avoided energy component: “[t]he
3 Avoided Energy component must specify if [avoided environmental costs] are
4 included.”⁹

5 **Q. Witness Snider defends DEP’s exclusion of the capital costs associated with**
6 **building new coal ash impoundments from the NEM calculation, stating that**
7 **NEM DER will have no impact on the number of impoundments DEP**
8 **requires nor the capital cost of those impoundments. Are you satisfied with**
9 **this answer?**

10 A. No. As discussed above, DEP plans to move all coal ash disposal to dry ash,
11 which will be stored dry in lined landfills.¹⁰ The lined landfills used for disposal
12 have a capital cost, and this cost is based on the quantity of coal ash DEP projects
13 it will produce. To the extent that distributed PV displaces coal generation on the
14 margin, the amount of coal ash produced will decrease, and therefore the size or
15 number of building phases of the lined landfill required will decrease. Distributed
16 PV may also delay the need for a new dry coal ash lined landfill or expansion,
17 saving ratepayers money. The Company should account for these avoided costs in
18 future NEM DER methodology updates.

19 *Avoided Line Losses*

20 **Q. In his rebuttal testimony, Witness Snider describes the Company’s plans to**
21 **update the line loss study. Does this address all of the concerns you raised in**
22 **your testimony regarding DEP’s calculation of avoided line losses?**

23 A. No. Witness Snider addresses one of my recommendations: that DEP conduct an
24 updated line loss study. However, the language DEP uses does not indicate a
25 binding commitment to finish the study by the next proceeding, and it does not
26 provide any details on the methodology that will be used. Witness Snider simply

⁹ Settlement Agreement, Docket No. 2014-246-E, Attachment A (description of environmental costs).

¹⁰ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 8, line 10.

1 indicates that DEP “anticipates that this study could be complete for use in next
2 year’s fuel proceeding,”¹¹

3 **Q. What methodology do you recommend DEP use to update its line loss study?**

4 A. As I discussed in my direct testimony, DEP should use marginal losses, not
5 average losses. Witness Snider does not address DEP’s use of average line losses
6 rather than marginal line losses in his testimony, and I am concerned that the
7 updated study will not adequately capture the actual impact of adding an
8 additional kW of solar to the distribution system. Marginal losses increase with
9 the square of current, and are roughly double the value of average line losses.¹²
10 Therefore, each increment of additional load results in higher-than-average line
11 losses. Conversely, each incremental reduction in load – including load reduction
12 resulting from distributed solar PV – results in a higher-than-average *reduction* in
13 line losses. The impact of incremental change is, by definition, the marginal
14 impact.

15 Finally, DEP should use a solar PV profile rather than a fixed constant output to
16 properly represent DEP’s expected generator and transmission infrastructure. This
17 is because marginal line losses vary throughout the day as load varies. Solar PV
18 production also varies throughout the day. Aligning the marginal line losses with
19 solar PV’s production curve across the year is essential to properly credit solar
20 PV’s avoided line loss contribution with its actual production. Witness Snider
21 states that the updated study will “consider the influence of a solar profile on line
22 losses to determine whether a net-metered solar-specific shape provides higher-
23 than-average or lower-than-average line losses.”¹³ However, it is important that
24 DEP does more than just *consider* the influence of a solar profile, and actually
25 uses a solar profile for its study.

¹¹ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 9, lines 11-19.

¹² Direct Testimony of Devi Glick, Duke Energy Progress, Docket No. 2018-1-E, at page 13.

¹³ Rebuttal Testimony of Glen Snider, Duke Energy Progress, Docket No. 2018-1-E, at page 9, lines 15-17.

1 Q. Does this conclude your testimony?

2 A. Yes.