

CENTERPOINT'S RESPONSE TO THE DRAFT DIRECTOR'S REPORT ON ITS 2019/2020 IRP

SUBMITTED MAY 13, 2021

Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South (formerly known as "Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc." and hereinafter referred to as "Vectren" or "CenterPoint South") hereby submits this response to the Draft Director's Report on its 2019/2020 Integrated Resource Plan ("IRP") submitted to Dr. Bradley Borum, Director of Research, Policy, and Planning of the Indiana Utility Regulatory Commission ("Commission") on April 9, 2021.

CenterPoint South would like to thank the Director for his thoughtful comments. As discussed in the IRP stakeholder process, the Director's Report is used as a continuous improvement tool. We were pleased to see that the concerns raised by the Director's Report with regard to our 2016 IRP were addressed in our 2020 IRP and appreciate the recognition of our continuous improvement efforts.

CenterPoint South has captured the continuous improvement suggestions in the Director's Report, including the continued integration of AMI data, the need to better understand Distributed Energy Resources (DER), the need for integrated planning efforts, and incorporation of a sensitivity modeling run to build an "unconstrained portfolio." In this response, CenterPoint South will briefly address these key areas. CenterPoint South acknowledges the other recommendations and observations in the Draft Report but will not directly respond to those because (1) it has already provided a response, or (2) recognizes the Director's recommendations constitute continuous improvement to be considered in the preparing of next IRP. Additionally, CenterPoint South will provide responses to direct questions raised or comments suggesting more clarity is needed.

AMI Data/DER Analysis

CenterPoint South agrees that AMI data contains a treasure trove of information that will be useful for future planning efforts. CenterPoint South will look for opportunities to utilize available data to improve future IRPs, including exploring use of specific DER load shapes and collection of historical information for the purposes of future forecasting. Some suggestions will take longer than others to pursue, such as the request to consider sub-hourly modeling or incorporation of location specific attributes of DERs as more sophisticated modeling tools become available.

CenterPoint South recognizes the need to continually understand and plan for integration of DER into the system. We will continue to follow FERC order 2222 and how it presents itself in MISO. In the 2019/2020 IRP, CenterPoint South made considerable strides in aligning the IRP analysis with updated information from MISO, particularly as it pertains to emerging resources. CenterPoint South will continue to plan for future developments.

Integrated Planning

CenterPoint South recognizes the benefits of generation planners working closely with transmission and distribution planners. CenterPoint South transmission and distribution planners were key members of the IRP team throughout the 2019/2020 IRP. They were integral to helping evaluate portfolios that moved from traditional dispatchable resources to increasing levels of intermittent renewable resources

and providing key inputs and analysis. CenterPoint South will continue to look for opportunities to coordinate planning efforts.

Unconstrained Portfolio

The Director noted that it would be helpful to have a modeling run without constraints to glean insights for the analysis, even though results might be unrealistic. CenterPoint South appreciates the feedback and commits to providing an unconstrained model run in the next IRP to help provide potential insights. For purposes of the 2019/2020 IRP, an explanation for the use of constraints may be beneficial as the Director considers his comments:

Some constraints help modeling results mimic real world realities. For example, a limit was included on how much power can be imported from the system at any given hour. Others were put into place to minimize key risks for our planning such as long-term reliance on the MISO capacity market or building portfolios that are not able to meet the expected MISO capacity obligations in the winter. While these results are theoretically possible, CenterPoint South would never accept these results because of its obligations to its customers.

Constraints were also utilized to drive diversity of portfolios. This constraint was utilized to be responsive to both the Director's 2016 Report request for a wide range of portfolios and to stakeholders that desired more use of optimization modeling in developing portfolios. CenterPoint South constrained the model to lock in various resource options within portfolio development and let the model optimize for the least cost portfolio. For example, CenterPoint South did not allow the model to select a large CCGT. CenterPoint South knew that the Commission would not accept a plan that included a large CCGT, having stated as much in a recent proceeding. This process was done for other resource options like coal to gas conversion, keeping the Brown units open through 2029, or all renewables by 2030. CenterPoint South allowed the model to select resources to compliment these possibilities while minimizing Net Present Value of Revenue Requirements (NPVRR). In this way, CenterPoint South created 15 unique portfolios for consideration in the risk analysis. Ultimately, the high technology future portfolio was selected as the preferred portfolio. This was one of the five scenario runs, which had minimal constraints.

Questions/Clarity needed

The discussion below responds to specific comments and questions included in the Draft Director's Report. The Director's material is set forth in black typeface, and CenterPoint South's answers are in red.

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"It seems incremental future DSM is added back to the model results to arrive at an average use forecast that does not include the modeled impact of future DSM. It is not clear whether this represents a real change from the 2016 IRP in the way things were done or if Vectren just clarified that the original model accounted for DSM and that it is then added back after the fact for the final forecast. (*Vectren IRP pages 193-194*)"

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“As with the residential model, the DSM variable in the commercial model is new since the previous IRP but incremental future DSM is added back to the final forecast so, again, it’s not clear if this is an actual change in methodology or just how the models are presented.”

This was a change from the 2016 IRP. The updated model structures for residential average use and for commercial sales both included a DSM variable in the 2019/2020 IRP. The estimated effect of historical DSM was added back to better estimate projected sales without DSM. Page 5 of the Itron report shows the residential model structure with the DSM variable, and page 8 of the Itron report shows commercial model structure with the DSM variable. These variables are not included in the 2016 Itron report on pages 5 and 8.

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“The commercial economic variable is an equally weighted combination of commercial employment and output. The measure of output is unclear here because the text still refers to it as “non-manufacturing output” as it did in the 2016 IRP but the actual equation now shows it as “GDP” (the “Economic Data” section also says “non-manufacturing output”).”

The commercial economic variable uses non-manufacturing GDP, non-manufacturing employment, and population. Moving forward, CenterPoint South will explicitly note the non-manufacturing portion in the equation should the model framework remain the same.

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“The EV forecast makes use of EIA data and information on registered electric vehicles in Vectren’s service area but, increasingly, it is important to have utility specific data to supplement EIA data.”

Throughout the report, the Director emphasized that utility specific data, particularly from CenterPoint South’s AMI system, will be increasingly important in future IRPs. CenterPoint South will continue to look for opportunities to improve future IRPs and use utility specific data, including AMI data, where possible.

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“The 2014 IRP contained low and high load forecasts, but the 2016 and 2019 IRPs do not. Were alternative forecast bands calculated?”

“Did Vectren rely solely on stochastic analysis to capture the variability of electricity demand?”

“Pace Global developed stochastics around load growth expectations for the Vectren control area and the neighboring ISO zones, including MISO, PJM, and the South East Reliability Council (SERC). (*Vectren IRP page 218*) Unfortunately there is virtually no discussion of whether high and low load forecasts were developed and there is minimal discussion of the stochastic load forecasting methodology.”

CenterPoint South did include alternate high and low load forecasts. Please see Figure 7.8 Vectren Peak Load (MW) Alternate Scenarios on page 221 of the IRP for alternate forecasts. High and low bands were created utilizing Pace’s stochastic methodology to create inputs for deterministic scenarios.

A description of the methodology utilized to alternate forecasts is included on pages 94-96 of the IRP. Further detail on load stochastics is included in 7.3.2.11 Load Stochastics and Technical Appendix 11.61.1 Load Stochastics. The methodology that was included in the 2016 IRP was largely the same (more detail in the process can be found in the 2016 IRP technical appendix pages 264-270); however, in the 2019/2020 IRP this process also included load shapes from Itron (EV and DG) and DGS (DSM) help add consistency to the process and to also incorporate new variables that could have a significant future effect on load.

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“The discussion of direct load control is not clear. The narrative discusses savings numbers that do not seem plausible for DLC. Would Vectren agree that 69,000 kW and 360,000,000 kWh would mean that DLC was operating 5,000 hours a year and the load was eliminated, not just moved to other periods? “

“Is it correct to assume the savings numbers are for all DSM, not just DLC? (*Vectren IRP pages 165-166*)”

The quantified savings (69,000 kW and 350,000 kWh) describe historical Energy Efficiency savings. The statement “Between 2010 and 2018, Vectren’s DSM programs reduced demand by approximately 69,000 and provided annual incremental gross energy savings of approximately 360,000,000 kWh” is an accurate statement. However, it is meant to stand on its own and is not connected with the preceding paragraph on DLC.

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“It is possible that a portfolio has more downside cost benefit than other portfolios but this was not considered by Vectren. (*Vectren IRP page 85*) Would Vectren agree that other portfolios that expand the risk analysis might provide valuable insights? “

This measure was not raised during the stakeholder process, and therefore was not included in the risk analysis. That is not to say that the measure does not have merit or should not be considered in future IRPs. As described throughout the IRP process, score card measures are all decision-making tools that help inform a decision on the preferred portfolio. Many things were considered within the analysis. This extra information could help inform future analyses. Given that the final four portfolios all scored well in the cost risk measure, it is reasonable to assume they would have all performed well on this measure.

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Is it appropriate to use full life cycle emissions for existing units? The numbers cited include facility construction, which are “sunk” emissions at this point for existing generation facilities. (*Vectren IRP pages 85-86*)

Yes. CenterPoint South believes it is appropriate to consider life cycle emissions for existing units and not consider any portion as “sunk.” First, existing resources were evaluated for retirement in a few different ways. First, within the optimization, and secondly within various portfolio options (BAU 2029 or renewables flexible gas that retired Culley 3 before the end of the 20-year period). To evaluate drops in emissions (life cycle or out of the stack), it is essential to consider the emissions of the unit pre and post retirement. If emissions, were considered “sunk” for existing units, we would only be evaluating total emissions of new resources and not consider the emissions benefit of retiring existing resources.

Secondly, the request to include life cycle emissions was driven by stakeholders. On a practical level, CenterPoint South could not find a credible alternative to the NREL study for use in the balanced score card. CenterPoint South chose the NREL study because it was comprehensive, credible, and non-biased. Life cycle emissions by definition are cradle to grave emissions estimates. The NREL study included life cycle emissions rates for various resources, which were derived from evaluating and utilizing hundreds of credible studies. To our knowledge no other study was available for this purpose at the time of the IRP analysis, and the NREL study did not parse out past emissions from current or future emissions rates.

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Would adapting the Herfindahl-Hirschman index (HHI) used to measure market concentration be useful here? The portfolio HHI could be calculated by unit or by source. $HHI = \text{the sum of the squares of the percentage market share.}$ (*Vectren IRP pages 88-89*)

Diversity of resources in the preferred portfolio was a stated objective within the IRP. However, it has proved to be difficult to capture this attribute in a scorecard measure. Ultimately, in the 2019/2020 IRP CenterPoint South chose to make it a stated objective but evaluate this objective in a qualitative manor. Thank you for the suggestion; it is worth continuing to think through potential measures to capture this attribute within a scorecard.

Conclusion

CenterPoint South would like to thank the Director and his team for these thoughtful comments. As mentioned above, this report is a key component of continuous improvement efforts.

Sincerely,

Matt Rice

Director, Indiana Electric Regulatory and Rates