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INDIANA UTILITY  
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**SOUTHERN INDIANA GAS AND ELECTRIC COMPANY  
D/B/A CENTERPOINT ENERGY INDIANA SOUTH  
(CEI SOUTH)**

**DIRECT TESTIMONY  
OF  
MATTHEW A. RICE  
DIRECTOR OF INDIANA ELECTRIC REGULATORY AND RATES**

**ON**

**INTEGRATED RESOURCE PLAN, NECESSITY OF THE WIND PROJECT, RATEMAKING  
ISSUES, AND ALTERNATIVE REGULATION (TO EXTENT NEEDED)**

**SPONSORING PETITIONER'S EXHIBIT NO. 3 (PUBLIC),  
ATTACHMENTS MAR-1 THROUGH MAR-5**

**DIRECT TESTIMONY OF MATTHEW A. RICE**

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Matthew Rice. My business address is 211 NW Riverside Drive, Evansville,  
4 Indiana 47708.

5 **Q. BY WHOM ARE YOU EMPLOYED?**

6 A. I am employed by CenterPoint Energy Service Company, LLC (“Service Company”), a  
7 wholly-owned subsidiary of CenterPoint Energy, Inc. The Service Company provides  
8 centralized support services to CenterPoint Energy, Inc.’s operating units, one of which  
9 includes Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana  
10 South (“CEI South”, “Petitioner”, or “Company”).

11 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?**

12 A. I am submitting testimony on behalf of CEI South, which is an indirect subsidiary of  
13 CenterPoint Energy, Inc.

14 **Q. WHAT IS YOUR ROLE WITH RESPECT TO PETITIONER?**

15 A. I am Director of Indiana Electric Regulatory and Rates.

16 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.**

17 A. I received a Bachelor of Science degree in Business Administration from the University of  
18 Southern Indiana in 1999. I also received a Master of Business Administration from the  
19 University of Southern Indiana in 2008.

20 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.**

21 A. Prior to working for Petitioner, I worked as a Market Research Analyst for American  
22 General Finance for six years working primarily on customer segmentation, demographic  
23 analysis, and site location analysis. In 2007, I joined the Company as a Market Research  
24 Analyst, and have held various positions, of increasing responsibility, to include Senior  
25 Analyst, Manager of Market Research, and Director of Research and Energy  
26 Technologies. Between 2009 and 2021, I was responsible for CEI South’s long-term  
27 energy forecasting for the Company’s Integrated Resource Plans (“IRP”). I have managed  
28 the Company’s 2011, 2014, 2016, and 2019/2020 IRPs in addition to managing its IRP  
29 stakeholder process since 2014. My duties have also included conducting economic

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1 analysis, primary and secondary customer research (including surveying, focus groups,  
2 segmentation, and demographic analysis), customer satisfaction research, housing  
3 market research, and monitoring industry research. In February 2019, I became Manager  
4 of Resource Planning with responsibility for internal and external generation analysis and  
5 reporting. I was named to my current position of Director of Indiana Electric Regulatory  
6 and Rates in October 2020. With it, I maintained my prior responsibilities related to the  
7 Company's IRP and added regulatory and rates functions for CenterPoint Energy, Inc.'s  
8 Indiana Electric service territory.

9 **Q. WHAT ARE YOUR PRESENT DUTIES AND RESPONSIBILITIES AS DIRECTOR OF**  
10 **INDIANA ELECTRIC REGULATORY AND RATES?**

11 A. I am responsible for Petitioner's electric regulatory and rate matters in regulated  
12 proceedings before the Indiana Utility Regulatory Commission ("Commission"). I also have  
13 responsibility for resource planning and reporting for CEI South, including the IRP.

14 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE COMMISSION?**

15 A. Yes. I have testified before the Commission on behalf of CEI South for a Certificate of  
16 Public Convenience and Necessity ("CPCN") in Cause Nos. 45052, 45501, 45564, and  
17 45754. I have also testified in support of Petitioner's request to enter into a purchase  
18 power agreement related to solar projects in Cause Nos. 45600 and 45786 and in and  
19 Petitioner's request for approval of a tariff rate for Excess Distributed Generation in Cause  
20 No. 45378. Additionally, I have testified in Cause Nos. 44910-TDSIC-8, TDSIC-9, and  
21 TDSIC-10, in Cause Nos. 44909-CECA 3 and CECA 4, in Cause Nos. 45052-ECA 2 and  
22 ECA 3, and in Cause No. 43405 DSMA 19 and DSMA 20. Finally, I've testified in CEI  
23 South's securitization case in Cause No. 45722 and its request for a CPCN for the F.B.  
24 Culley East Ash Pond compliance project in Cause No. 45795.

25 **II. PURPOSE & SCOPE OF TESTIMONY**

26 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

27 A. My testimony describes the analysis and results of CEI South's 2019/2020 IRP process  
28 and the benefits of the Preferred Portfolio. I support Petitioner's request for an Order in  
29 this Cause granting CEI South a CPCN to purchase and acquire, indirectly through a Build  
30 Transfer Agreement ("BTA"), a wind facility, that will have an aggregate nameplate  
31 capacity of approximately [REDACTED] megawatts ("MW") (the "Wind Project" or the "Project")

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1 pursuant to Ind. Code ch. 8-1-8.5. I also describe why the Wind Project qualifies as a  
2 “Clean Energy Project” under Ind. Code ch. 8-1-8.8 (the “Statute”). In addition, I will detail  
3 how the cost of the Wind Project will likely be included within rate base in our next general  
4 rate case, but could be recovered via the CECA mechanism, depending on which provides  
5 more timely recovery. I describe the effect the Wind Project is expected to have on  
6 customer rates. Finally, I will support the Company’s request for approval of an Alternative  
7 Regulatory Plan (“ARP”), to the extent one is needed.

**8 Q. ARE YOU SPONSORING ANY ATTACHMENTS TO YOUR DIRECT TESTIMONY?**

9 A. Yes. I am sponsoring the following attachments:

- 10 • Petitioner’s Exhibit No. 3, Attachment MAR-1: CEI South’s 2019/2020 IRP,  
11 Volume 1 of 2;
- 12 • Petitioner’s Exhibit No. 3, Attachment MAR-2 (CONFIDENTIAL): CEI South’s  
13 2019/2020 IRP Volume 2 of 2;
- 14 • Petitioner’s Exhibit No. 3, Attachment MAR-3: Residential Monthly Bill Impact;
- 15 • Petitioner’s Exhibit No. 3, Attachment MAR-4 (CONFIDENTIAL): Estimated  
16 Monthly Rate Impact by Customer Class, Net of Renewable Energy Credits  
17 (“RECs”); and
- 18 • Petitioner’s Exhibit No. 3, Attachment MAR-5: Proofs of Legal Notice Publication  
19 (Late Filed Attachment)

**20 Q. WERE THESE ATTACHMENTS PREPARED BY YOU OR UNDER YOUR DIRECTION?**

21 A. Yes, they were. The Company’s 2019/2020 IRP process was managed under my direction  
22 or supervision, although it is important to recognize that other Company employees and  
23 consultants with specific areas of expertise engaged by the Company were involved in the  
24 process of developing the 2019/2020 IRP.

**25 III. CEI SOUTH’S 2019/2020 IRP PROCESS****26 Q. PLEASE DESCRIBE HOW CEI SOUTH APPROACHED THE 2019/2020 IRP.**

27 A. The 2019/2020 IRP was CEI South’s most detailed resource planning analysis process.  
28 The Company worked with several industry experts to conduct the technical analysis: Itron  
29 provided the long-term energy and demand forecast; 1898 and Company, a Burns and  
30 McDonnell company (“1898 & Company”), worked with CEI South to conduct an All-  
31 Source Request For Proposals (“the 2019 All-Source RFP”) and provide modeling inputs

1 for various generating resources; Black and Veatch assisted with several studies utilized  
 2 to evaluate numerous alternatives for existing resources; GDS provided Energy Efficiency  
 3 modeling inputs; and Siemens PTI, formerly Pace Global Energy Services (“Siemens  
 4 PTI”), provided scenario development, deterministic modeling, probabilistic modeling, and  
 5 assistance with the risk analysis. A copy of Petitioner’s 2019/2020 IRP is attached to my  
 6 testimony as Petitioner’s Exhibit No. 3, Attachments MAR-1 and MAR-2  
 7 **(CONFIDENTIAL)**.

8 **Q. WHAT PROCESS DID PETITIONER USE IN DEVELOPING THE 2019/2020 IRP?**

9 A. Petitioner began the process by reviewing stakeholder comments from the 2016 IRP,  
 10 including the Director’s Report, and by carefully reviewing the Commission Orders issued  
 11 in connection with Petitioner’s requests for CPCNs in Cause Nos. 45052 (F.B. Culley 3  
 12 upgrades and Combined Cycle Gas Turbine (“CCGT”)) and 45086 (50 MWac Troy solar).  
 13 This feedback was used to formulate twelve continuous improvement commitments that  
 14 were shared with CEI South IRP stakeholders in our first public stakeholder meeting on  
 15 August 15, 2019, and fulfilled on June 30, 2020, with the submission of the 2019/2020  
 16 IRP. In the first stakeholder meeting, CEI South presented the analysis plan and laid out  
 17 all topics to be discussed with stakeholders for each of CEI South’s public stakeholder  
 18 meetings. Figure 3.1 “2019/2020 Stakeholder Meetings” on page 110 of the IRP,  
 19 Petitioner’s Exhibit No. 3, Attachment MAR-1, details the topics discussed in each  
 20 meeting, summarized in Figure 1 below.

**Figure 1: 2019/2020 Stakeholder Meetings**

August 15, 2019	October 10, 2019	December 13, 2019	June 15, 2020
<ul style="list-style-type: none"> <li>• 2019/2020 IRP Process</li> <li>• Objectives and Measures</li> <li>• All-Source RFP</li> <li>• Environmental Update</li> <li>• Draft Reference Case Market Inputs &amp; Scenarios</li> </ul>	<ul style="list-style-type: none"> <li>• RFP Update</li> <li>• Draft Resource Costs</li> <li>• Sales and Demand Forecast</li> <li>• DSM MPS/ Modeling Inputs</li> <li>• Scenario Modeling Inputs</li> <li>• Portfolio Development</li> </ul>	<ul style="list-style-type: none"> <li>• Draft Portfolios</li> <li>• Draft Reference Case Modeling Results</li> <li>• All-Source RFP Results and Final Modeling Inputs</li> <li>• Scenario Testing and Probabilistic Modeling Approach and Assumptions</li> </ul>	<ul style="list-style-type: none"> <li>• Final Reference Case and Scenario Modeling Results</li> <li>• Probabilistic Modeling Results</li> <li>• Risk Analysis Results</li> <li>• Preview the Preferred Portfolio</li> </ul>

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1 The general process involved presenting information and gathering feedback from  
2 stakeholders on key topics, including but not limited to the following: objectives, scorecard  
3 development, forecasts, modeling inputs, scenario development, portfolio development,  
4 technical modeling, and results. At the beginning of each stakeholder meeting, CEI South  
5 made a point to follow up with stakeholders on input provided in the prior meeting. Often  
6 stakeholder feedback was utilized, but in instances where it was not, CEI South discussed  
7 why it was not used. The planning analysis began with the 2019 All-Source RFP, which  
8 was conducted simultaneously with the IRP and was utilized as an input into modeling for  
9 resource selection/portfolio development. Objectives were presented at the first meeting.  
10 Scorecard development also began at this meeting and was refined throughout the  
11 process based on stakeholder feedback and evaluation of measures to ensure that each  
12 was a good representation of the risk factor it represented. Scenarios (potential future  
13 states) then were developed with stakeholder input for use in deterministic modeling.  
14 Portfolios (combinations of resource options to meet customer load over the evaluation  
15 period) were then developed with stakeholder input. Care was taken to ensure a wide  
16 range of scenarios and portfolios were utilized and evaluated within the IRP analysis,  
17 respectively. These portfolios then were modeled and evaluated within the deterministic  
18 futures and within probabilistic simulation of 200 potential futures (also referred to as  
19 stochastic modeling). CEI South utilized quantitative and qualitative information produced  
20 within this analysis to select a preferred portfolio.

21 **Q. PLEASE BRIEFLY DESCRIBE THE COMPANY’S RFP PROCESS AS IT RELATES TO**  
22 **THE IRP.**

23 A. As explained by Petitioner’s Witness F. Shane Bradford, to date, the Company has  
24 conducted three RFPs. CEI South retained 1898 & Company to act as its agent in  
25 managing its RPFs and the RPF processes in order to gather resource availability and  
26 pricing information for various resources, particularly emerging resources such as wind,  
27 solar, solar + storage, and standalone storage. First, on June 12, 2019, per Commission  
28 feedback in Cause No. 45052 and in connection with the preparation of the 2019/2020  
29 IRP, CEI South conducted the 2019 All-Source RFP for 10 to 700 MWac of capacity from  
30 all sources. Results of the 2019 All-Source RFP were summarized into modeling inputs  
31 for the IRP for solar, solar + storage, standalone storage, and wind. Mr. Bradford  
32 discusses the RFP in greater detail.

1 **Q. WHAT STEPS DID CEI SOUTH TAKE TO ENSURE THAT PRICING INCLUDED**  
2 **WITHIN MODELING IN ITS 2019/2020 IRP WAS AS ACCURATE AS POSSIBLE?**

3 A. Care was taken to help ensure up-to-date and accurate information was included within  
4 modeling. For example, only projects that provided a firm price and were either on CEI  
5 South's system or included a delivered price were included within modeling inputs. These  
6 were referred to as Tier 1 projects within the IRP.

7 Proposals were divided into two tiers, based on factors that could add cost  
8 risk to [CEI South] customers. Tier 1 Proposals were those that included  
9 binding pricing and delivery of energy to SIGE.SIGW ([CEI South's] load  
10 node) or were physically located in [CEI South's] service territory. Tier 2  
11 included the remaining Proposals that were not classified as Tier 1. Tier 2  
12 Proposals generally did not provide a binding bid price and/or were located  
13 off [CEI South's] system, which increases cost risk due to congestion.  
14 Despite these risks, several were still analyzed and considered during the  
15 RFP evaluation process; however, [CEI South] wanted, to the extent  
16 possible, to include bids with more price certainty within the IRP modeling  
17 in order to protect customers from price volatility.

18 Petitioner's Exhibit No. 3, Attachment MAR-1 at 155.

19 1898 & Company took care to understand the bids and include all relevant costs, including  
20 known transmission upgrades. This involved communications between 1898 & Company  
21 and bidders to clarify information provided within the bid. Relevant data was provided to  
22 1898 & Company via a standardized template to help keep information consistent among  
23 bids.

24 **Q. WHAT FORECASTS DID CEI SOUTH USE IN ITS 2019/2020 IRP?**

25 A. Multiple forecasts were used as an input to the analysis to first develop a reference case.  
26 As described in Petitioner's Exhibit No. 3, Attachment MAR-1, Section 2.4.1 of the IRP,  
27 pages 91-93, CEI South relied on several industry experts for key inputs in the IRP  
28 analysis. For coal, gas, market capacity price forecasts, and long-term emerging resource  
29 costs, a consensus forecast was used. For natural gas and coal, CEI South created an  
30 average price using data from PIRA Energy Group, Wood Mackenzie, Siemens PTI, ABB,  
31 and Energy Ventures Analysis (EVA). For the MISO Zone 6 capacity value, CEI South  
32 created an average, utilizing Siemens PTI, ABB, and Wood Mackenzie forecasts.<sup>1</sup> The  
33 long-term capital price forecast (beyond 2024) for emerging supply side resources was  
34 based on the average of National Renewable Energy Laboratory ("NREL"), 1898 &

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<sup>1</sup> CEI South did not have access to a capacity forecast from PIRA or EVA.

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1 Company, and Siemens PTI forecasts. Siemens PTI developed the carbon price forecast.  
2 Itron developed the energy and demand forecast. GDS created a price forecast for  
3 demand side resources. Siemens PTI utilized both AURORAxmp power dispatch model  
4 with reference case inputs and expectations for the broader market to generate on-peak  
5 and off-peak power prices in the MISO region. In order to create varying inputs for  
6 scenarios, CEI South worked with stakeholders to determine how key inputs would vary  
7 by scenario in the short-, mid-, and long-term based on narrative-based futures. This  
8 process helped ensure multiple perspectives were captured and used to create a wide  
9 range of potential futures. Siemens PTI used probabilistic distributions and adjusted  
10 reference case forecasts for each scenario in conjunction with stakeholder guidance,  
11 where reasonable.

12 **Q. IN YOUR OPINION, WERE THE FORECASTS USED BY CEI SOUTH REASONABLE?**

13 A. Yes. Following the 2016 IRP, CEI South was praised in the Director's Report for using  
14 consensus forecasts where possible to increase transparency for stakeholders and  
15 incorporate multiple views from credible sources. CEI South continued using consensus  
16 forecasts to develop the 2019/2020 IRP. Other inputs provided by expert third-party  
17 sources were shared and discussed as part of the stakeholder process. Forecasts were  
18 also compared with publicly available forecasts, such as the Energy Information  
19 Administration's Annual Energy Outlook, for reasonableness.

20 **Q. DID CEI SOUTH CONSIDER STAKEHOLDER INPUT RECEIVED AT THE COMPANY-  
21 SPECIFIC MEETINGS?**

22 A. Yes. CEI South held three workshops as part of these meetings designed to solicit input  
23 from stakeholders that was incorporated into the IRP process. The fourth public meeting  
24 included a preview of the Preferred Portfolio. CEI South described how stakeholder input  
25 received at the prior stakeholder meeting was utilized in each meeting. Where feedback  
26 was not used, CEI South explained the reasoning. Feedback from stakeholders helped  
27 shape the analysis in significant ways, including but not limited to: scorecard development  
28 (identification and inclusion of key risks including considering full life cycle of CO<sub>2</sub>e),  
29 scenario development, expected MISO accreditation of resources, fuel price forecasts,  
30 consideration of a wide range of portfolios, and use of the 2019 All-Source RFP.

31 **Q. DID YOU INCORPORATE STAKEHOLDER INPUT INTO THE PORTFOLIO  
32 DEVELOPMENT PROCESS?**



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1 A. Yes. CEI South incorporated stakeholder input prior to and during the 2019/2020 IRP  
2 analysis. Continuous improvement of the resource planning analysis was integral to CEI  
3 South’s 2019/2020 IRP. CEI South learned from the prior IRP that stakeholders were  
4 interested in utilizing least cost optimization to help ensure portfolio cost was as low as  
5 possible. In the third public stakeholder meeting held on December 13, 2019, CEI South  
6 discussed each portfolio development strategy and described the relevant stakeholder  
7 input used to help develop portfolios. Examples of stakeholder input considered included,  
8 but were not limited to: explore options at A.B. Brown, make adjustments to various  
9 scenarios, explore conversion options, run A.B. Brown until 2029, run A.B. Brown until  
10 2039, do not run fossil fuel plants beyond 2030, consider smaller CCGT options, and  
11 consider flexible gas CTs and renewables.

12 **Q. HOW DID CEI SOUTH DEVELOP THE PORTFOLIOS MODELED IN THE 2019/2020**  
13 **IRP?**

14 A. CEI South worked with stakeholders to consider and utilize strategies to develop a wide  
15 range of portfolios. Five portfolio development strategies were discussed with  
16 stakeholders: (i) Status Quo (i.e., continue running existing units), (ii) Scenario-Based (i.e.,  
17 least cost optimization), (iii) Bridge (i.e., continued use of A.B. Brown assets), (iv) Diverse  
18 (i.e., diverse energy with renewables, gas, and coal), and (v) Renewables Focused (i.e.,  
19 much less to no reliance on fossil fuel resources). Except for the Scenario Based portfolio  
20 development strategy, various resource options were locked in, and deterministic  
21 modeling was utilized to select the most economical way to meet the remaining capacity  
22 and energy obligations. For example, in one portfolio, under the Bridge portfolio  
23 development strategy, the Brown units would continue to run with the existing scrubber  
24 through 2029, and the model determined the replacement to meet MISO’s planning  
25 reserve margin requirements and optimized for lowest net present value of revenue  
26 requirements (“NPVRR”). The Scenario-Based portfolio options were created for each of  
27 the five deterministic scenarios. In this process, existing coal units<sup>2</sup> were evaluated for  
28 economic retirement. Ultimately, this process produced fifteen distinct portfolios, ranging

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<sup>2</sup> A.B. Brown units 1 & 2, F.B. Culley 2, and Warrick Unit #4. Warrick Unit #4 is a jointly operated plant with Alcoa Power Generating, Inc. (“Alcoa”). The current contract expires at the end of 2023, leaving a 150 MW drop in capacity in all portfolios. CEI South modeled a potential 3-year extension of the contract; it was not selected based on economics.

1 from continuing most coal resources through the end of the forecast to an all renewables  
2 portfolio by 2030.

3 **Q. PLEASE SUMMARIZE THE FIFTEEN OPTIMIZED PORTFOLIOS THAT CEI SOUTH**  
4 **EXAMINED.**

5 A. Fifteen portfolios were created utilizing the process described above. Figure 2 below is a  
6 visual representation of the wide range of portfolios analyzed, bucketed by five portfolio  
7 development strategies: Status Quo, Scenario-Based, Bridge, Diverse, and Renewables  
8 Focused. A brief description of each strategy follows. A Status Quo portfolio identified as  
9 Business as Usual (“BAU”) through 2039 was included as a bookend. This portfolio  
10 included continuing to run all coal plants, except for Warrick Unit #4, through 2039. Five  
11 Scenario-Based portfolios were created (one per scenario) for the following scenarios:  
12 reference case, low regulatory, high technology, 80 percent reduction of CO<sub>2</sub> by 2050, and  
13 high regulatory. Each of these potential future states were optimized to produce a least  
14 cost portfolio in each future state. Four Bridge portfolios were created to explore options  
15 to continue to utilize existing equipment at the A.B. Brown plant. These portfolios included  
16 converting one unit to gas, converting two units to gas, converting one unit to gas with the  
17 addition of a small CCGT, and continuing to run both units with coal through 2029. Two  
18 Diverse energy portfolios were created: one with a small CCGT and the other with a mid-  
19 sized CCGT. These portfolios were included to explore options that produce a balanced  
20 mix of energy from coal, gas, and renewable resources. Finally, three Renewables  
21 Focused portfolios were created. The first was a renewables plus flexible gas portfolio,  
22 which involved closure of all coal units by 2034 and included gas CTs, renewables, and  
23 storage. The House Bill (“HB”) 763 portfolio was created with a very high CO<sub>2</sub> price per  
24 stakeholder input. The other bookend portfolio was to close all fossil fuel plants by 2030.

Figure 2: Portfolios by Strategy



1 All portfolios included demand side resources (i.e., Energy Efficiency and Demand  
2 Response). It should also be noted that the model selected a significant amount of wind  
3 and solar resources in all portfolios (300 MWs of wind and 1,150 MWs of solar before  
4 2025), including the BAU portfolios, in part to replace Warrick Unit #4, but also because  
5 these resources lowered the NPVRR due to their production of low-cost energy.

6 **Q. WHAT ANALYSES DID CEI SOUTH USE TO DETERMINE THE PREFERRED**  
7 **PORTFOLIO?**

8 A. CEI South worked with Siemens PTI to conduct a multi-faceted risk analysis, which  
9 included evaluating portfolios on a quantitative and qualitative basis. After creation of the  
10 fifteen portfolios, each portfolio was evaluated utilizing simulated dispatch in the reference  
11 case. Several portfolios included fatal flaws and were excluded from further consideration.  
12 As described in more detail in Petitioner's Exhibit No. 3, Attachment MAR-1, Section 8.2  
13 (Evaluation of Portfolio Performance) of the IRP, page 245, these included the HB 763,  
14 low regulatory, high regulatory, 80 percent reduction of CO<sub>2</sub>, and the diverse energy mid-  
15 sized CCGT portfolio. Reasons for the exclusion of these portfolios included high net  
16 sales, high market exposure, high cost, or redundancy. The remaining ten portfolios were  
17 then dispatched in each deterministic scenario to determine performance among a wide  
18 range of potential future states. Some portfolios performed very consistently in terms of  
19 cost across each scenario, including the reference case, preferred portfolio, and

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1 renewables plus flexible gas. Others, like the BAU portfolio or the all-renewables portfolio,  
 2 had much greater cost variation relative to the Reference Case across each potential  
 3 future. Next, the remaining ten portfolios were dispatched 200 times under varying market  
 4 conditions. Information gathered from this modeling was then utilized to populate the  
 5 balanced scorecard, which was developed with stakeholder input. The balanced  
 6 scorecard included quantitative measures to help CEI South understand tradeoffs among  
 7 competing objectives of the IRP; these included stochastic mean 20-year NPVRR (cost),  
 8 95th Percentile Value of NPVRR (cost risk), Percent Reduction of CO<sub>2</sub>e (life cycle  
 9 emissions reduction including CO<sub>2</sub>, methane and other emissions on a CO<sub>2</sub> equivalent  
 10 basis), long-term percentage reliance on the energy market for sales or purchases, and  
 11 long-term percentage reliance on the capacity market for sales and purchases. Table 1  
 12 below shows a summary of these measures.

**Table 1: Quantitative IRP Scorecard Objectives and Metrics**

Objective	Metric
Affordability	Mean value for the 20-Year Net Present Value of Revenue Requirements (NPVRR) (million\$) across 200 dispatch iterations under varying market conditions
Cost Uncertainty Risk Minimization	95th percentile of NPVRR (million\$) across 200 dispatch iterations under varying market conditions
Environmental Emissions	Reduction in tons of life-cycle greenhouse gas emissions (CO <sub>2</sub> e) 2019-2039
Avoiding Overreliance on Market Risk	Annual Energy Sales and Purchases, divided by Annual Generation, average (%) and Annual Capacity Sales and Purchases, divided by Total Resources, average (%)

13 Six portfolios (five included continued use of A.B. Brown with coal or conversion options  
 14 and the remaining CCGT option), which were highest in cost and cost risk, were removed  
 15 from consideration at this point based on their overall performance on scorecard measures  
 16 and other qualitative considerations discussed at the last stakeholder meeting on June 15,  
 17 2020. Four competitive options remained for further analysis and consideration: (i) the  
 18 reference case, (ii) renewables plus flexible gas, (iii) renewables by 2030, and (iv) the high  
 19 technology portfolio. Table 2 below provides details regarding each portfolio.

Table 2: Portfolio Detail

Year	Reference Case	Renewables + Flexible Gas	Renewables by 2030	High Technology
2021-23	1.25% Energy Efficiency	1.25% Energy Efficiency	1.25% Energy Efficiency	1.25% Energy Efficiency
2022	New Wind (300 MW)	New Wind (300 MW)	New Wind (300 MW)	New Wind (300 MW)
2023	New Solar (731 MW), New Storage (126 MW)	New Solar (731 MW), New Storage (126 MW)	New Solar (731 MW), New Storage (278 MW)	New Solar (731 MW), New Storage (126 MW)
2023	Retire ABB1, ABB2, FBC2, Exit Warrick (730 MW)	Retire ABB1, ABB2, FBC2, Exit Warrick (730 MW)	Retire ABB1, ABB2, FBC2, Exit Warrick (730 MW)	Retire ABB1, ABB2, FBC2, Exit Warrick (730 MW)
2024	New Combustion Turbine (236 MW)	New Combustion Turbine (236 MW)	-	New Combustion Turbine (236 MW)
2024	New Solar (415 MW) and Demand Response	New Solar (415 MW) and Demand Response	New Solar (415 MW) and Demand Response	New Solar (415 MW) and Demand Response
2024-26	0.75% Energy Efficiency	0.75% Energy Efficiency	1.00% Energy Efficiency	0.75% Energy Efficiency
2025		-	-	New Combustion Turbine (236 MW)
2027-39	0.75% Energy Efficiency	0.75% Energy Efficiency	1.00% Energy Efficiency	0.75% Energy Efficiency
2029-32	-	-	Retire FBC3, ABB3, ABB4 (427 MW), New Storage (360 MW), Solar (700 MW)	-
2033-39	New Solar (250 MW)	Retire FBC3 (270 MW), New Combustion Turbine (236 MW)	New Solar (450 MW)	New Storage (50 MW)
2024-39	Average Annual Capacity Market Purchases (137 MW)	Average Annual Capacity Market Purchases (135 MW)	Average Annual Capacity Market Purchases (170 MW)	Average Annual Capacity Market Purchases (4 MW)

1 **Q. WHAT WERE THE RESULTS OF THE SCORECARD PROCESS?**

2 A. Of the four remaining portfolios, the high technology portfolio performed well across all  
3 risk factors. Within the IRP, the cost was listed as being within 2.5 percent of the lowest  
4 cost portfolio, the renewables plus flexible gas. The renewables plus flexible gas portfolio  
5 retires F.B. Culley 3 earlier than the high technology portfolio thereby saving customers  
6 money. Both portfolios include about the same level of renewables and a second CT. This  
7 cost gap closes to 1.5 percent due to construction efficiencies that would be lost with  
8 building the second CT ten years later under the renewables plus flexible gas option,  
9 which is not reflected within the IRP NPVRR.<sup>3</sup> The Preferred Portfolio performed well in  
10 terms of cost risk relative to other portfolios. While the percent reduction of CO<sub>2</sub>e was less  
11 than the renewables plus flexible gas and all renewables by 2030 portfolios, the Preferred  
12 Portfolio was near the middle of all portfolios and overwhelmingly driven by the continued  
13 use of F.B. Culley 3. Due to changes in environmental regulations, the Company is  
14 presently evaluating the decision to retire F.B. Culley 3 earlier than 2039.<sup>4</sup> Of the  
15 remaining portfolios, the Preferred Portfolio relied least on energy purchases and was

<sup>3</sup> For additional information, see Petitioner's Exhibit No. 6 – the Direct Testimony of Witness Nelson Bacalao in Cause No. 45564.

<sup>4</sup> For additional information, see Petitioner's Exhibit No. 4 – the Direct Testimony of Witness Angila Retherford in Cause No. 45564.

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1 among the best in terms of reliance on energy sales to the market. The Preferred Portfolio  
2 was dramatically better, at 0.4 percent, in terms of less long-term reliance on capacity  
3 purchases, while the other three portfolios average reliance ranged from 9.4 to 11.9  
4 percent per year. The Preferred Portfolio relied on capacity sales of 4.6 percent, which  
5 was in the middle of all portfolios.

6 **Q. PLEASE DESCRIBE FURTHER WHY THE PREFERRED PORTFOLIO WAS**  
7 **SELECTED.**

8 A. The Preferred Portfolio was selected because it was determined to be a very reliable and  
9 resilient portfolio that offers a transition to a clean energy future by complementing  
10 renewable energy resources with fast start and fast ramping capability. The portfolio is a  
11 good mix of traditional and emerging resources and has enough dispatchable capacity to  
12 cover CEI South’s load in the winter when there is drastically less solar output during the  
13 winter peak period. The Preferred Portfolio is cost effective and expected to save CEI  
14 South’s customers up to \$320 million over the IRP’s twenty-year planning period (2020-  
15 2039) compared to continuing to operate coal units. The Preferred Portfolio provides a  
16 physical hedge against high energy and capacity costs. As the future continues to be  
17 uncertain, this plan offers a diverse set of resources with multiple off-ramps, designed to  
18 hedge against risk of putting too much emphasis on a few large resources. While the  
19 flexible gas CTs are available to provide low-cost capacity, their projected usage, largely  
20 limited to critical times, results in lower CO<sub>2</sub> emissions by 75 percent by 2035 over 2005  
21 levels.

22 **Q. WHAT FEEDBACK DID THE COMMISSION’S DIRECTOR’S REPORT HAVE**  
23 **REGARDING THE PREFERRED PORTFOLIO AND THE IRP PROCESS**  
24 **GENERALLY?**

25 A. The Director’s Report had very positive comments overall regarding CEI South’s IRP  
26 process and portfolio evaluation. The Director commended CEI South “for facilitating a  
27 robust stakeholder process,” despite the challenges of 2020: “Even with the restrictions  
28 necessitated by the pandemic, [CEI South] has improved its stakeholder processes by  
29 conducting transparent and meaningful conversations with [CEI South]’s subject matter  
30 experts and consultants.”<sup>5</sup> The Report also noted that CEI South’s IRP “included

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<sup>5</sup> Dr. Bradley Borum, “Director’s Report for Vectren’s 2019/2020 Integrated Resource Plan,” November 17, 2021, page 28.

1 significant advances to its processes, analysis, methodology, and software,”<sup>6</sup> and the  
2 Director “appreciates the significant changes [CEI South] has made from its 2016 IRP.”<sup>7</sup>

3 The Director’s Report did recommend that CEI South give due consideration to allowing  
4 Distributed Energy Resources to bid in future RFPs for resources.<sup>8</sup> The Report also noted  
5 that for future IRPs, the most significant challenges will likely include improved modeling  
6 of Energy Efficiency, Demand Response, other forms of Distributed Energy Resources,  
7 on-going improvements to incorporate avoided costs into IRPs and RFPs, and greater  
8 integration of distribution system planning with IRPs and MISO’s planning processes.

9 **IV. THE PREFERRED PORTFOLIO**

10 **Q. WHAT ARE THE MAJOR COMPONENTS OF THE PREFERRED PORTFOLIO**  
11 **IDENTIFIED IN THE 2019/2020 IRP?**

12 A. The Preferred Portfolio is very diversified, with significant amounts of solar, solar plus  
13 storage, wind, gas, coal, demand response, and energy efficiency. Specifically, it includes  
14 energy efficiency at 1.25 percent between 2021-2023 and 0.75 percent<sup>9</sup> thereafter. The  
15 portfolio calls for 300 MW of wind resources to come online in 2022. It also calls for 1,150  
16 MWs of new solar and solar plus storage in 2023-2024 to replace coal capacity, including  
17 Warrick Unit #4 which Petitioner jointly operates with Alcoa. Additionally, two combustion  
18 turbines (“CTs”) come online in 2024-2025. In 2039, 50 MW of storage was selected.

19 **Q. WHAT ARE THE PRIMARY BENEFITS OF THE PREFERRED PORTFOLIO?**

20 A. The Preferred Portfolio includes a diverse mix of resources. The risk analysis  
21 demonstrated that a diversified mix of generation resources minimizes risk to customers  
22 if the future differs from the reference case scenario. As described in the final stakeholder  
23 meeting on June 15, 2020, and the 2019/2020 IRP, the Preferred Portfolio has the  
24 following characteristics: reliability, cost effectiveness, flexibility, diversity, risk mitigation,  
25 sustainability, and timeliness.

26 **Q. WHY DID THE PREFERRED PORTFOLIO RANK THE BEST IN THE RISK ANALYSIS?**

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<sup>6</sup> Director’s Report, page 31.

<sup>7</sup> Director’s Report, page 31.

<sup>8</sup> Director’s Report, page 29.

<sup>9</sup> The level of EE for 2024 and beyond will be decided with future IRPs and DSM filings.

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1 A. Benefits of the Preferred Portfolio are spelled out in detail in Section 9 of the IRP  
2 (Petitioner’s Exhibit No. 3, Attachment MAR-1) and include affordability, cost uncertainty  
3 risk mitigation, environmental risk mitigation, market risk mitigation, future flexibility,  
4 reliability, operational flexibility, resource diversity, local resources, and economic  
5 development for the CEI South territory and the state of Indiana. The Preferred Portfolio  
6 performed well across multiple risk factors in the balanced scorecard. It avoids long-term  
7 reliance on the capacity market or heavy reliance on emerging technology. The fast start  
8 and ramping capability of CTs allows for high penetration of low-cost renewable energy  
9 resources, which were consistently selected for all portfolios, regardless of potential future  
10 events. It also allows CEI South to incrementally pursue renewable build out with  
11 confidence that dispatchable resources will be available when needed, particularly in  
12 winter months where multi-day periods of cloud cover and no wind are possible.

13 **Q. WHAT SHORT-TERM STEPS DOES THE PREFERRED PORTFOLIO REQUIRE CEI**  
14 **SOUTH TO TAKE?**

15 A. The Preferred Portfolio recommendation is to retire or exit 730 MWs of coal generation  
16 and replace it initially with 700-1,000 MWs of solar generation (some connected to battery  
17 storage), and 300 MWs of wind. The renewable additions are complemented by  
18 dispatchable generation that consists of two new gas CTs and maintaining F.B. Culley 3  
19 (coal unit).

20 **Q. HAS CEI SOUTH TAKEN STEPS TO BEGIN IMPLEMENTING THE PREFERRED**  
21 **PORTFOLIO?**

22 A. Yes. Consistent with the short-term action plan in the 2019/2020 IRP, CEI South  
23 requested, and subsequently received, approval, in the Commission’s October 27, 2021  
24 Order in Cause No. 45501 for two renewable projects – the Posey County Solar Project  
25 and Warrick County Solar Project (collectively the “45501 Solar Projects”), which were  
26 selected from the 2019 All-Source RFP. Additionally, CEI South requested and obtained  
27 approval in the Commission’s May 4, 2022 Order in Cause No. 45600 for two solar PPAs  
28 (the Vermillion County and Knox County Solar Projects). CEI South also sought and  
29 received approval in the Commission’s June 28, 2022 Order in Cause No. 45564 to  
30 construct two CTs. More recently, CEI South has requested a CPCN in Cause No. 45754  
31 to purchase and acquire, indirectly through a BTA, a solar facility in Pike County, Indiana,  
32 that will have an aggregate nameplate capacity of approximately 130 MWac (the “Pike



1 County Solar Project”). This proceeding, for approval of the Wind Project, is the next step  
2 in implementation of the Preferred Portfolio.

3 **Q. HOW DOES THE RELIEF REQUESTED IN THIS PROCEEDING SUPPORT THE**  
4 **GOALS AND CONCLUSIONS OF THE 2019/2020 IRP AND ITS SHORT-TERM ACTION**  
5 **PLAN?**

6 A. A significant amount of wind resources was selected in all 15 portfolios included within the  
7 2019/2020 IRP, including the Preferred Portfolio. The Project provides abundant  
8 renewable energy and also provides capacity needed to meet CEI South’s electric load  
9 requirements, particularly in the winter where MISO is indicating that the PRMR is  
10 expected to be highest at approximately 25%. The Wind Project is a reasonable addition  
11 to CEI South’s generation resource portfolio that increase reliability and efficiency, while  
12 mitigating risk through diversification.

13 **Q. WHAT SPECIFIC WIND RESOURCES WERE INCLUDED IN CEI SOUTH’S**  
14 **PREFERRED PORTFOLIO?**

15 A. The Preferred Portfolio called for 300 MWs of wind in 2022 based on a bid received for a  
16 20-year wind PPA. The project had an expected capacity factor of [REDACTED] (Northern  
17 Indiana). Prior to the completion of the IRP, the PPA was signed by another utility within  
18 the state of Indiana; final pricing for the project is not known by CEI South. The project  
19 was considered indicative of the potential for other wind projects in the region. The only  
20 two other wind projects in [REDACTED] withdrew from the RFP and were removed from  
21 consideration for modeling after [REDACTED] and following  
22 results of the [REDACTED].

23 **V. THE WIND PROJECT IS AN INTEGRAL PART OF THE PREFERRED PORTFOLIO**  
24 **AND PLAN.**

25 **Q. PLEASE BRIEFLY DESCRIBE THE WIND PROJECT.**

26 A. As further discussed by Petitioner’s Witness Bradford, the Wind Project is a proposed wind  
27 generation facility that is anticipated to have the capability of generating approximately  
28 [REDACTED] MWs of electricity. As described by Witness Bradford, the Project is located in [REDACTED]  
29 [REDACTED] to be interconnected to the [REDACTED]. The target  
30 Commercial Operation Date (“COD”) is expected to be on or before January 1, 2025. The  
31 project is [REDACTED]. CEI South and the Developer have executed a

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1 comprehensive term sheet and are negotiating a BTA under which CEI South will  
2 purchase and acquire the Wind Project, subject to fulfillment of the conditions precedent  
3 to closing.

4 **Q. IN YOUR OPINION, IS THE WIND PROJECT CONSISTENT WITH CEI SOUTH'S**  
5 **2019/2020 IRP?**

6 A. Yes. The Wind Project is consistent with the needs identified in the Preferred Portfolio to  
7 add wind resources and to diversify CEI South's resource mix. Wind resources help  
8 diversify CEI South's resource mix with clean renewable energy, consistent with the  
9 Preferred Portfolio. As described by Petitioner's Witness Jennifer K. Story, CenterPoint  
10 Energy, Inc is able to monetize the Production Tax Credit ("PTC") and pass on savings to  
11 CEI South's customers, which will provide lower energy purchase costs for 10 years. This  
12 is one of the benefits of adding utility-owned resources like the Wind Project.

13 **Q. IN YOUR OPINION, IS THE WIND PROJECT CONSISTENT WITH THE**  
14 **COMMISSION'S STATE-WIDE ANALYSIS OF EXPANSION OF ELECTRIC**  
15 **GENERATING CAPACITY?**

16 A. Yes. The Commission has explained that this is an ongoing analysis. The most recent  
17 written report of the analysis is from 2018, which is a bit dated in today's marketplace and  
18 predates many more recent Commission proceedings involving generation. This project  
19 is consistent with both the 2018 Report and what I believe is the current state of the  
20 Commission's ongoing analysis. Wind is identified as a viable resource to help meet the  
21 electricity need for the state of Indiana.

22 **Q. DOES THE WIND PROJECT FULFILL A CAPACITY NEED IDENTIFIED IN CEI**  
23 **SOUTH'S 2019/2020 IRP?**

24 A. Yes. The Wind Project helps fill a portion of the capacity need identified in the 2019/2020  
25 IRP. The Wind Project will fulfill a total of ■■■ MWs of installed capacity identified as  
26 necessary in the 2019/2020 IRP. This resource is expected to cover approximately ■■■  
27 MWs toward CEI South's Planning Reserve Margin Requirement ("PRMR") in the  
28 summer, and approximately ■■■ MWs of accredited capacity in the winter. These amounts  
29 will likely decline slightly over time, accounting for the expected penetration of wind on the  
30 MISO system; however, the Effective Load Carrying Capability ("ELCC") for wind is not  
31 expected to decline as dramatically as solar given the large amount of wind currently on  
32 the MISO system. CEI South's wind generation is supported by dispatchable resources

1 within the Preferred Portfolio, including Culley 3 and two new gas combustion turbines,  
2 recently approved in Cause No. 45564.

3 **Q. IS THE WIND PROJECT NECESSARY IN ORDER FOR PETITIONER TO CONTINUE**  
4 **TO PROVIDE ADEQUATE AND RELIABLE SERVICE?**

5 A. Yes. This Project is part of a balanced portfolio identified in the 2019/2020 IRP with  
6 renewable energy that is complemented by dispatchable generation. As I mentioned, this  
7 Project will help meet MISO’s seasonal PRMR. Mr. Bradford discusses the critical need  
8 of the Project to meet the Company’s MISO seasonal PRMR in detail.

9 **Q. ARE YOU FAMILIAR WITH THE FACTORS IN IND. CODE § 8-1-8.5-4 THAT THE**  
10 **COMMISSION MUST CONSIDER BEFORE GRANTING A CPCN?**

11 A. Yes. While I am not an attorney, I am familiar with the factors set forth in Ind. Code § 8-  
12 1-8.5-4, which provides, in relevant part: “the commission shall take into account the  
13 following:

14 (1) The applicant’s current and potential arrangement with other electric  
15 utilities for:

- 16 (A) the interchange of power;
- 17 (B) the pooling of facilities;
- 18 (C) the purchase of power; and
- 19 (D) joint ownership of facilities; and

20 (2) Other methods for providing reliable, efficient, and economical  
21 electric service, including the refurbishment of existing facilities,  
22 conservation, load management, cogeneration and renewable energy  
23 sources.”

24 Ind. Code § 8-1-8.5-4(b).

25 **Q. IN YOUR OPINION, IS THE WIND PROJECT CONSISTENT WITH THE FACTORS SET**  
26 **FORTH IN IND. CODE § 8-1-8.5-4?**

27 A. Yes. Many of the factors described in this portion of the statute predate CEI South’s  
28 membership in MISO, which covers sections A-C. Other factors, including joint ownership  
29 of facilities, and other methods for providing reliable, efficient, and economical electric  
30 service, including the refurbishment of existing facilities, conservation, load management,  
31 cogeneration, and renewable energy sources were all considerations within the  
32 2019/2020 IRP and therefore are included in the planning that led to the Preferred Portfolio  
33 with which this Project is consistent.

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1 **Q. ARE YOU FAMILIAR WITH THE FACTORS IN IND. CODE § 8-1-8.5-5 THAT THE**  
 2 **COMMISSION MUST CONSIDER BEFORE GRANTING A CPCN?**

3 A. Yes. While I am not an attorney, I am familiar with the factors set forth in Ind. Code § 8-1-  
 4 8.5-5, which provides, in relevant part: “A certificate shall be granted only if the commission  
 5 has:

6 (1) made a finding as to the best estimate of construction,  
 7 purchase, or lease costs based on the evidence of record;

8 (2) made a finding that either:

9 (A) the construction, purchase, or lease will be  
 10 consistent with the commission's analysis (or such part of the  
 11 analysis as may then be developed, if any) for expansion of  
 12 electric generating capacity; or

13 (B) the construction, purchase, or lease is consistent  
 14 with a utility specific proposal submitted under section 3(e)(1) of  
 15 this chapter and approved under subsection (d). . . .;

16 (3) made a finding that the public convenience and necessity  
 17 require or will require the construction, purchase, or lease of the facility;

18 (4) made a finding that the facility, if it is a coal-consuming  
 19 facility, utilizes Indiana coal or is justified, because of economic  
 20 considerations or governmental requirements, in using non-Indiana  
 21 coal.”

22 Ind. Code § 8-1-8.5-5(b).

23 In addition, if a utility proposes to construct a facility that has a generating capacity of more  
 24 than 80 megawatts, the Commission must find that the estimated costs of the proposed  
 25 facility are, to the extent commercially practicable, the result of competitively bid  
 26 engineering, procurement, or construction contracts, as applicable and also consider the  
 27 following: “(A) Reliability” and “(B) Solicitation by the applicant of competitive bids to obtain  
 28 purchased power capacity and energy from alternative suppliers.” Ind. Code § 8-1-8.5-  
 29 5(e)(2).

30 **Q. IN YOUR OPINION, IS THE WIND PROJECT CONSISTENT WITH THE FACTORS SET**  
 31 **FORTH IN IND. CODE § 8-1-8.5-5?**

32 A. Yes. Initially, the costs reflected in this proceeding represent “the best estimate of  
 33 construction, purchase, or lease costs based on the evidence of record.” As described in  
 34 further detail by Petitioner’s Witness Bradford, the Company has presented the best  
 35 estimate of the costs to acquire the Wind Project. In addition, in accordance with Ind. Code  
 36 § 8-1-8.5-5(b)(2), the construction of the Wind Project is consistent with CEI South’s  
 37 2019/2020 IRP and the Commission’s state-wide analysis. The Wind Project fills a portion  
 38 of the capacity need identified in the 2019/2020 IRP. This Project covers ■■■ MWs of the

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1 total 300 MW of installed wind capacity identified as necessary in the IRP. Public  
2 convenience and necessity require the acquisition of this Project. I will address  
3 competitive procurement later in my testimony.

4 **Q. CEI SOUTH CURRENTLY IS PREPARING ITS 2022/2023 IRP. DO YOU HAVE ANY**  
5 **CONCERNS THAT THE RELIEF REQUESTED IN THIS PROCEEDING WILL BE**  
6 **INCONSISTENT WITH THE RESULTS OF THE 2022 IRP?**

7 A. No. While IRPs are conducted at a point in time, I do not expect that the 2022/2023 IRP  
8 will identify new resources in a Preferred Portfolio that differ in any substantial way from  
9 the Preferred Portfolio developed through the 2019/2020 IRP. While the cost of renewable  
10 projects has increased, they remain attractive given that renewable resources emit zero  
11 CO<sub>2</sub> and are shielded from the current inflationary pressures on gas and coal commodities.  
12 The supply of coal has become less certain and has increased in cost since the last IRP,  
13 which is likely to make solar and wind resources more favorable. I also would note that,  
14 to date, the Generation Transition Plan required an initial step of identifying and selecting  
15 approximately 700 – 1,000 MWac of solar generation, 300 MW of wind generation, and  
16 approximately 460 MW of natural gas Combustion Turbine generation. The Wind Project  
17 is likely to be consistent with the Preferred Portfolio additions identified in the 2022/2023  
18 IRP.

19 **Q. ARE EARLY RESULTS FROM THE CURRENT IRP SELECTING WIND?**

20 A. While still very early in the process early 2022/2023 modeling suggests that wind is  
21 attractive. As a part of a well-diversified portfolio, wind helps shield customers from the  
22 risk of a price on carbon. Additionally, wind output can occur at all times of the day,  
23 complementing the solar resources included in the Generation Transition Plan and  
24 providing a capacity benefit that is projected to be higher in the winter.

25 **VI. PROPOSED RATEMAKING AND ACCOUNTING ISSUES**

26 **Q. IS THE WIND PROJECT CONSIDERED A “CLEAN ENERGY PROJECT” UNDER**  
27 **INDIANA LAW?**

28 A. Yes. Indiana Code § 8-1-8.8-2 defines a “clean energy project” as including “projects to  
29 develop alternative energy sources, including renewable energy projects.” In addition,  
30 “energy from wind” is specifically listed as one of the clean energy resources in Indiana  
31 Code § 8-1-37-4(a)(1) through -4(a)(16), thus making it a “renewable energy resource”

1 under Ind. Code § 8-1-8.8-10. The proposed Wind Project also promotes a “robust and  
2 diverse portfolio of energy production or generating capacity, including . . . the use of  
3 renewable energy resources”. Ind. Code § 8-1-8.8-1.

4 **Q. PLEASE SUMMARIZE CEI SOUTH’S RATEMAKING PROPOSAL FOR TIMELY**  
5 **RECOVERY OF COSTS AND EXPENSES WITH RESPECT TO THE WIND PROJECT**  
6 **AND THE STATUTORY SUPPORT FOR THIS PROPOSAL.**

7 A. Indiana Code ch. 8-1-8.8 provides for financial incentives including the timely recovery of  
8 costs and expenses incurred during the construction and operation of clean energy  
9 projects. In accordance with Ind. Code § 8-1-8.8-11, we would typically use the CECA  
10 mechanism approved in Cause No. 44909. With the timing of this Project, however, I  
11 would not expect to use the CECA mechanism for “timely recovery.” Because of our  
12 existing TDSIC plan, the Company must file a general rate case before January 1, 2024.  
13 We will likely use a future test year that will capture the in-service date of this Project. I  
14 also expect we will implement rates that would reflect this Project in the general rate case  
15 in the first half of 2025, which is before CECA rates would be implemented. If for whatever  
16 reason, this Project is not included in rate base in the upcoming general rate case, the  
17 Company would propose to use the CECA mechanism for timely recovery. CEI South  
18 requests the Commission authorize the necessary ratemaking treatment to permit CEI  
19 South to timely recover, through inclusion of these assets in rate base in the next general  
20 rate case or through the utilization of the CECA mechanism, the project costs it will incur  
21 for the acquisition and operation of the Wind Project through its rates. CEI South proposes  
22 to recover costs incurred for the Wind Project, including depreciation expense, PISCC,  
23 taxes, and O&M expenses. Should the CECA mechanism be utilized, rate updates will be  
24 filed as a subdocket in Cause No. 44909, the proceeding in which CECA was originally  
25 approved. If CECA is utilized, the recoverable amounts for approved investments,  
26 including the Wind Project, would be aggregated within the total revenue requirement.  
27 Allocations by rate schedule are applied to the total revenue requirement to determine the  
28 amounts recoverable from each Rate Schedule. The amounts allocated to each Rate  
29 Schedule are divided by the estimated billing determinants to calculate the per-unit CECA  
30 rates and charges. Any variances will be recovered (or passed back) consistent with the  
31 methodology utilized in the annual CECA mechanism update. Regardless, the Company  
32 will still use CECA to reflect the Production Tax Credit (“PTC”) and Renewable Energy

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1 Certificates (“RECs”) generated by the Project, to the extent actual PTC and RECs differ  
2 from the amounts reflected in base rates.

3 As described by Witness Behme, CEI South will depreciate all investments within the Wind  
4 Project over a period of 30 years. Carrying costs on the Wind Project investment will be  
5 calculated by applying CEI South’s pre-tax Weighted Average Cost of Capital (“WACC”),  
6 utilizing CEI South’s cost of long-term debt and Commission approved cost of equity, to  
7 the capital investments for the Wind Project after the Project is placed into electric plant in  
8 service. This calculation will be updated in subsequent general rate cases or annually if  
9 the CECA mechanism is utilized.<sup>10</sup>

10 CEI South will allocate the revenue requirements after conducting a cost-of-service study  
11 to be performed in the next general rate case.

12 As explained by Witness Behme, credits for the net<sup>11</sup> PTCs associated with the proposed  
13 Project and proceeds from the sale of Renewable Energy Certificates (“RECs”) generated  
14 by the Wind Project will be reflected as offsets in the CECA revenue requirement. As  
15 discussed by Witness Behme, depreciation expenses, PISCC, including both debt and  
16 equity, taxes, and O&M expenses associated with the Wind Project will be deferred into a  
17 regulatory asset until such time as the Wind Project investments, and the associated  
18 deferred balances, are included for recovery in rates (either through base rates or the  
19 CECA).

20 **Q. IN YOUR OPINION, WHAT ARE THE BENEFITS OF A BTA?**

21 A. The BTA offers long-term stability. CEI South will also maintain the land rights and options,  
22 zoning permits, and Generator Interconnection, shielding customers from potential future  
23 costs beyond the 30-year asset life. Additionally, the cost to customers for this resource  
24 will continue to decline over time as the asset is depreciated. This traditional rate making  
25 approach is in contrast to PPAs which often increase over time.

26 **Q. DOES CEI SOUTH’S PORTFOLIO ONLY CONSIST OF OWNED RESOURCES?**

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<sup>10</sup> If CECA is utilized the cost of debt will be recalculated annually.

<sup>11</sup> Should the tax benefit be sold, the net benefit (full PTC minus cost of sale) would flow to customers. This is discussed in detail by Witness Story.

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1 A. No. The Petitioner’s generation transition plan includes both ownership and PPA  
2 structures, staggered at various lengths between 20 and 30 years. These factors are  
3 designed to diversify CEI South’s portfolio and provide off ramps that enable the Petitioner  
4 to react to changing circumstances and make appropriate changes in its resources. BTAs  
5 and PPAs have unique benefits that work together to minimize risks in the long-term.

6 **Q. PLEASE DESCRIBE THE BILL IMPACT OF THE WIND PROJECT ON A RESIDENTIAL  
7 CUSTOMER USING 1,000 KWH PER MONTH.**

8 A. Petitioner’s Exhibit No. 3, Attachment MAR-3 shows that the estimated residential bill  
9 impact for a residential customer that uses 1,000 kWh per month is approximately \$20 per  
10 month, depending on the cost of the Project. This amount includes an offset for PTCs, but  
11 does not include offsets such as REC sales, which are expected to lower customer bills,  
12 or other savings associated the Generation Transition Plan. Petitioner’s Exhibit No. 3,  
13 **Attachment MAR-4 (CONFIDENTIAL)** shows the estimated rate impact of the Wind  
14 Project by customer class.

15 **Q. WHAT ARE RENEWABLE ENERGY CREDITS (“RECS”)?**

16 A. RECs are market-based instruments that certify that the bearer owns one MWh of  
17 electricity generated from a renewable energy source.

18 **Q. HOW DOES CEI SOUTH INTEND TO PASS THAT VALUE BACK TO CUSTOMERS?**

19 A. The Company’s current practice is to sell RECs on behalf of CEI South customers to  
20 directly offset the cost of renewable energy projects. The benefit of REC sales, net of  
21 costs, would be included as an offset to the revenue requirement within the CECA.  
22 However, CEI South could choose to not sell RECs in the future or allow the RECs to be  
23 utilized in a Green Power tariff for customers.

24 **Q. HAVE CUSTOMERS EXPRESSED AN INTEREST IN A CONTRACT TO PURCHASE  
25 RENEWABLE ENERGY FROM CEI SOUTH?**

26 A. Yes. Several of CEI South’s large customers have expressed interest in potentially  
27 entering a contract to purchase renewable energy from CEI South or receiving power  
28 under a Green Power rate.

29 **Q. PLEASE DESCRIBE FURTHER CEI SOUTH PLANS TO RESPOND TO CUSTOMER  
30 INTEREST IN RENEWABLE RESOURCES.**



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1 A. CEI South is working to develop a Green Power tariff that would be available to customers  
2 that are interested in purchasing energy generated from renewable and/or  
3 environmentally friendly sources. The proposed green power tariff would be available to  
4 Large Power (“LP”) and High Load Factor (“HLF”) customers and be revenue neutral. Per  
5 the settlement agreement with the Indiana Office of Utility Consumer Counselor (“OUCC”)  
6 in Cause No. 45754 on the Pike County Solar Project, CEI South will consult with the  
7 OUCC prior to filing for the new tariff.

8 **Q. IN YOUR OPINION, ARE THE RATE PROPOSALS SET FORTH HEREIN**  
9 **REASONABLE AND IN THE PUBLIC INTEREST?**

10 A. Yes. The proposed ratemaking terms provide for reasonable cost recovery while providing  
11 related benefits and protections for customers. The projects will provide customers with  
12 reasonably priced, clean energy.

13 **VII. MISCELLANEOUS REGULATORY MATTERS**

14 **Q. HAVE YOU REVIEWED THE FINAL REPORT ISSUED BY THE 21ST CENTURY**  
15 **ENERGY POLICY DEVELOPMENT TASK FORCE DATED NOVEMBER 19, 2020 (THE**  
16 **“NOVEMBER 2020 FINAL REPORT”)?**

17 A. Yes. I reviewed the five pillars that the Task Force recommended serve as a lens through  
18 which it would review future potential policy decisions.

19 **Q. WHAT ARE THE FIVE PILLARS?**

20 A. The five pillars are reliability, resilience, stability, affordability, and environmental  
21 sustainability. Reliability consists of two fundamental concepts—adequacy and operating  
22 reliability. Adequacy is the ability of the electric system to supply the aggregate electric  
23 power and energy requirements of electricity consumers at all times, taking into account  
24 scheduled and reasonably expected unscheduled outages of system components.  
25 Operating reliability is the ability of the electric system to withstand sudden disturbances,  
26 such as electric short circuits or unanticipated loss of system components.

27 **Q. IN YOUR OPINION, IS THE PROPOSAL IN THIS PROCEEDING CONSISTENT WITH**  
28 **THOSE FIVE PILLARS?**

29 A. Yes. The addition of clean wind energy is consistent with the environmental sustainability  
30 pillar set forth in the November 2020 Final Report. Wind is a renewable, clean energy  
31 source. Operation of wind energy projects do not use fossil or nuclear fuel, which means

**CEI SOUTH – PET. EXH. NO. 3 (PUBLIC)**

1 there is no need for mining or drilling for fuel, no radioactive or hazardous wastes, no use  
2 of water for steam or cooling, and no emissions of greenhouse gases or other pollutants.  
3 Also, the price of wind power is not impacted by the volatility of commodities, as are other  
4 non-renewable sources.

5 Moreover, as further supported by the IRP, the Project promotes reliability. Addition of  
6 energy from the Project is needed to supply the aggregate power and energy requirements  
7 of electricity consumers at all times, particularly as other facilities are retired. Moreover,  
8 while wind resources are intermittent in nature, they are no more impacted by short circuits  
9 or unanticipated loss of system components than other generation resources. It should be  
10 noted that CEI South has proposed to pair renewable generation with quick start and fast  
11 ramping dispatchable natural gas CT generation, which will further enhance the ability of  
12 the system to withstand sudden disturbances.

13 Wind resources are an important part of the future of the electric industry, and are an  
14 efficient, low-cost source of energy, particularly in the winter when solar resources are at  
15 their lowest level of energy production. In this way, wind resources compliment solar  
16 resources in a diversified portfolio. As such, electric utilities are actively seeking to build  
17 and invest in wind infrastructure and expanding wind energy options for customers. As  
18 described above, CEI South's customers are increasingly interested in the addition of  
19 more renewable resources to meet their energy needs. Wind energy helps CEI South and  
20 central and southwestern Indiana move towards a cleaner generation portfolio by lowering  
21 the amount of CO<sub>2</sub> emitted from generating resources. A diversified portfolio also helps  
22 protect customers from risks in the marketplace, such as increases in fuel costs. MISO is  
23 projecting that the capacity credit associated with wind will remain relatively stable,  
24 diminishing slightly over time, and generally aligns with CEI South's winter peak need for  
25 energy, shielding customers from high energy costs. CEI South believes there is value in  
26 a balanced portfolio to reduce risk by having a balanced set of resources available to serve  
27 customer load (including wind, solar, energy efficiency, gas, and coal). The benefits of a  
28 balanced energy mix cannot be overstated. One of the simplest and best ways to plan in  
29 an uncertain environment is to provide a diverse portfolio, which provides a hedge against  
30 unforeseen changes in regulations, technologies, and market.

31 **Q. IN YOUR OPINION, WILL THE PREFERRED PORTFOLIO, WHICH INCLUDES WIND**  
32 **ENERGY PROVIDED BY THE WIND PROJECT, BE RESILIENT AND STABLE?**

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1 A. As to resiliency, the Preferred Portfolio, which includes wind energy, helps to minimize the  
2 risk of sustained disruption. Moreover, the IRP resulted in a Preferred Portfolio that  
3 significantly, but prudently, diversifies the resource mix for CEI South’s generation portfolio  
4 to meet current and future load and reserve margin requirements. Reliability was an  
5 important consideration in selecting a holistic portfolio. Wind resources are a proven  
6 technology that will help ensure CEI South can continue to meet PRMR. Wind assets are  
7 also well suited to provide a source of energy in the winter when solar energy output is at  
8 its lowest and customer usage is at its second highest annual level.

9 Moreover, while wind resources are intermittent in nature, they are no more impacted by  
10 short circuits or unanticipated loss of system components than other generation  
11 resources. As previously mentioned, CEI South has proposed to pair renewable  
12 generation with quick start and fast ramping dispatchable natural gas CT generation,  
13 which will further enhance the ability of the system to withstand sudden disturbances.

14 **Q. IN YOUR OPINION, DOES THE PUBLIC CONVENIENCE AND NECESSITY REQUIRE**  
15 **CONSTRUCTION OF THE WIND PROJECT?**

16 A. Yes. The Wind Project is consistent with CEI South’s IRP and its Generation Transition  
17 Plan, and it adds diversity to CEI South’s generation portfolio, which reduces risk. Fuel  
18 diversity and renewable resources protect electric utilities and their customers from things  
19 like fuel price fluctuations, and changes in regulatory practices that can drive up the cost  
20 of a particular fuel. The Wind Project is also needed to meet energy and capacity needs  
21 on Petitioner’s system. This is further discussed in Petitioner’s Witness Bradford’s  
22 testimony.

23 **Q. CAN YOU PLEASE EXPLAIN THE COMPANY’S REQUEST FOR AN ALTERNATIVE**  
24 **REGULATORY PLAN (“ARP”) IN CONNECTION WITH THE WIND PROJECT, TO THE**  
25 **EXTENT AN ARP IS NEEDED?**

26 A. To the extent necessary, CEI South is requesting approval of an ARP pursuant to Ind.  
27 Code § 8-1-2.5-6(a)(1). There are two components of this ARP:

28 (1) The Project is located outside Indiana. I am not an attorney, but Ind. Code § 8-1-2-6  
29 does not require that a public utility’s “property” be located in Indiana and Ind. Code §  
30 8-1-8.8-10 does not require that a renewable energy resource be located in Indiana.  
31 Nevertheless, this is a significant generating asset and, to the extent the Commission

1 feels it necessary, we seek an ARP allowing the ratemaking treatment we have sought  
2 even though the asset is located outside the State.

3 (2) Ind. Code § 8-1-8.5-5(e) contains provisions concerning cost estimates being based  
4 upon competitively bid engineering, procurement or construction contracts and that  
5 the actual construction will be competitively bid. This subsection, by its terms, only  
6 applies if the applicant proposes to construct the facility, and the Company is not  
7 proposing to construct the facility but to acquire a completed facility after it has already  
8 been constructed. As such, we do not believe it applies. To the extent subsection (e)  
9 applies, we seek to be relieved of these obligations.

10 **Q. WHAT ARE THE REQUIREMENTS FOR AN ARP AS SET FORTH IN INDIANA CODE**  
11 **CH. 8-1-2.5?**

12 A. Indiana Code § 8-1-2.5-6 provides two requirements in sub-sections (a)(1)(A) and (B) and  
13 states in pertinent part:

14 Sec. 6. (a) Notwithstanding any other law or rule adopted by the  
15 commission, except those cited, or rules adopted that pertain to those  
16 cited, in section 11 of this chapter, in approving retail energy services  
17 or establishing just and reasonable rates and charges, or both for an  
18 energy utility electing to become subject to this section, the commission  
19 may do the following:

20 (1) Adopt alternative regulatory practices, procedures, and  
21 mechanisms, and establish rates and charges that:

22 (A) are in the public interest as determined by consideration of  
23 the factors described in section 5 of this chapter; and

24 (B) enhance or maintain the value of the energy utility's retail  
25 energy services or property; including practices, procedures,  
26 and mechanisms focusing on the price, quality, reliability, and  
27 efficiency of service provided by the energy utility.

28 **Q. WHAT ARE THE “FACTORS DESCRIBED IN SECTION 5 OF THIS CHAPTER” AS**  
29 **CITED IN INDIANA CODE § 8-1-2.5-6 (a)(1)(A)?**

30 A. This refers back to Indiana Code § 8-1-2.5-5(b), which states in pertinent part:

31 (b) In determining whether the public interest will be served, the  
32 commission shall consider the following:

33 (1) Whether technological or operating conditions, competitive  
34 forces, or the extent of regulation by other state or federal regulatory  
35 bodies render the exercise, in whole or in part, of jurisdiction by the  
36 commission unnecessary or wasteful.

37 (2) Whether the commission's declining to exercise, in whole or in  
38 part, its jurisdiction will be beneficial for the energy utility, the energy  
39 utility's customers, or the state.

40 (3) Whether the commission's declining to exercise, in whole or in  
41 part, its jurisdiction will promote energy utility efficiency.

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1 (4) Whether the exercise of commission jurisdiction inhibits an  
2 energy utility from competing with other providers of functionally  
3 similar energy services or equipment.

4 **Q. ARE THESE TWO COMPONENTS OF THE REQUESTED ARP IN THE PUBLIC**  
5 **INTEREST?**

6 A. Yes. To the extent an ARP is necessary, both of these components of the proposed ARP  
7 would be in the public interest. The acquisition of this Project is needed in order to  
8 continue with the implementation of the Company's Preferred Portfolio. The addition of  
9 wind generation is needed to help diversify the generation mix, and this Project in  
10 particular enhances the value of CEI South's service to our customers. The specific  
11 competitive procurement provisions in Ind. Code 8-1-8.5-5(e) would have no application  
12 to this transaction as it is structured, and the selection of this Project was the result of  
13 competitive procurement. While we do not believe either that the location is an  
14 impediment or the competitive procurement provisions apply, the ARP would be  
15 necessary for us to complete the Project if we were incorrect in our interpretation. If the  
16 location of the Project or the application of the competitive procurement provisions would  
17 cause CEI South not to be able to acquire the Wind Project, which is in the public interest  
18 for the reasons stated in Petitioner's case-in-chief, then the ARP is in the public interest  
19 because it will allow for completion of the Project and therefore be beneficial for the energy  
20 utility and its customers. Under circumstances where the ARP is found necessary to allow  
21 CEI South the relief requested, the ARP also enhances the value of CEI South's retail  
22 energy services. Accordingly, to the extent needed, the ARP should be approved.

23 **Q. IS CEI SOUTH PUBLISHING A LEGAL NOTICE IN ACCORDANCE WITH IND. CODE**  
24 **8-1-2.5-6(d)?**

25 A. Yes, CEI South is causing to be published a legal notice in a newspaper of general  
26 circulation in any county in which the energy utility renders retail energy service. Proofs of  
27 publication of the legal notice will be submitted as a late filed exhibit once received as  
28 Petitioner's Exhibit No. 3, Attachment MAR-5.

29 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

30 A. Yes, at the present time.

**VERIFICATION**

I affirm under penalties for perjury that the foregoing representations are true to the best of my knowledge, information, and belief.

SOUTHERN INDIANA GAS AND ELECTRIC  
COMPANY D/B/A CENTERPOINT ENERGY  
INDIANA SOUTH



\_\_\_\_\_  
Matthew A. Rice  
Director of Indiana Electric Regulatory and Rates

1-10-23

\_\_\_\_\_  
Date

Attachment MAR-1 Provided Separately

Attachment MAR-2 (CONFIDENTIAL) Provided Separately



SOUTHERN INDIANA GAS AND ELECTRIC COMPANY dba CENTERPOINT ENERGY INDIANA SOUTH

Page 1 of 1

**The Wind Project**  
**Estimated Year 1 Impact of a Change in Clean Energy Cost Adjustment (CECA)**  
**on the Bill of a Residential Standard Customer Using 1,000 kWh per Month**

<u>Line</u>	<u>Description</u>	<u>Estimated Bill</u> <u>Impact</u>
1	Total Revenue Requirement from CMP-2 Sch 1; Line 19, Row E	\$ 66,835,460
2	2025 Annual Budgeted Residential Sales - kWh	1,366,683,597
3	CECA Residential Allocation Percentage (Modified 4CP) <sup>1</sup>	<u>40.6160%</u>
4	Estimated Monthly Bill Impact per 1,000 kWh (Line 1 * Line 3 ÷ Line 2 * 1,000)	<u>\$ 19.86</u>
5	Estimated Monthly Bill Impact per 860 kWh (Line 1 * Line 3 ÷ Line 2 * 860)	<u>\$ 17.08</u>

<sup>1</sup> Pursuant to Cause No. 43354-MCRA 21 S1 Settlement Agreement.

Attachment MAR-4 (CONFIDENTIAL) Provided Separately

Attachment MAR-5 Late-Filed Exhibit