STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

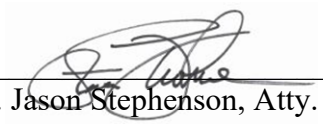
VERIFIED PETITION OF SOUTHERN INDIANA GAS AND ELECTRIC COMPANY D/B/A CENTERPOINT ENERGY INDIANA SOUTH ("CEI SOUTH') FOR AN ORDER: (1) ISSUING CEI SOUTH A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY ("CPCN") TO PURCHASE AND ACQUIRE THROUGH A BUILD TRANSFER AGREEMENT ("BTA") A SOLAR POWER ELECTRIC GENERATING FACILITY IN PIKE COUNTY, INDIANA, THAT WILL HAVE AN AGGREGATE NAMEPLATE CAPACITY OF APPROXIMATELY 130 MEGAWATTS ALTERNATING CURRENT (THE "PIKE COUNTY SOLAR PROJECT"); (2) FINDING THE PIKE COUNTY SOLAR PROJECT CONSTITUTES A "CLEAN ENERGY PROJECT" UNDER IND. CODE CH. 8-1-8.8; (3) APPROVING ASSOCIATED RATEMAKING AND ACCOUNTING TREATMENT FOR THE PIKE COUNTY SOLAR PROJECT UNDER IND. CODE § 8-1-8.8-11; AND (4) APPROVING CONFIDENTIAL TREATMENT FOR PRICING AND OTHER COMMERCIAL TERMS OF THE BTA AND RELATED CONFIDENTIAL INFORMATION.	)	**CAUSE NO. 45754**

SUBMISSION OF UPDATED PUBLIC TESTIMONY AND ATTACHMENTS OF PETITIONER'S CASE-IN-CHIEF

Petitioner, Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South, (CEI South) hereby submits an updated version of Petitioner's Exhibit No. 2 (Direct Testimony of F. Shane Bradford); Attachment EMC-1; and Attachment MAR-3 that makes public certain additional information Petitioner has determined can be unredacted. Petitioner will incorporate the attached versions of the foregoing exhibit and attachments into the testimony offered as evidence at the evidentiary hearing.

[Signature Page Follows]

Respectfully submitted,



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CERTIFICATE OF SERVICE

I certify that on the 26th day of September 2022, this document was filed with the Indiana Utility Regulatory Commission using the Commission's electronic filing system and was served electronically on the parties below.

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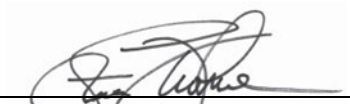

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Petitioner's Exhibit No. 2

Direct Testimony of F. Shane Bradford

IURC Cause No. 45754

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
d/b/a CENTERPOINT ENERGY INDIANA SOUTH
(CEI SOUTH)

DIRECT TESTIMONY
OF
F. SHANE BRADFORD
DIRECTOR OF POWER SUPPLY SERVICES

ON

BUILD TRANSFER AGREEMENT, SELECTION OF AND NEED FOR THE PROJECT, DETERMINATION OF LEVELIZED RATE

SPONSORING PETITIONER'S EXHIBIT NO. 2 (PUBLIC)
ATTACHMENTS FSB-1 THROUGH FSB-5

DIRECT TESTIMONY OF F. SHANE BRADFORD

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is F. Shane Bradford. My business address is 211 NW Riverside Drive, Evansville, Indiana, 47708.

Q. BY WHOM ARE YOU EMPLOYED?

A. I am employed by Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South ("Petitioner", "CEI South", or "Company"), which is an indirect subsidiary of CenterPoint Energy, Inc.

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

A. I am submitting testimony on behalf of CEI South.

Q. WHAT IS YOUR ROLE WITH RESPECT TO PETITIONER?

A. I am Director of Power Supply Services.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Science in Civil Engineering (1992) from the University of Dayton and a Master's in Business Administration (2002) from Indiana State University.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. I began my career in the utility industry at Dayton Power and Light Co. performing various maintenance and production roles within the electric generation division from 1992 to 1999. In 1999, I joined Cinergy's electric generation division and carried out various maintenance and production responsibilities until 2003 when I became a plant manager for one of Cinergy's subsidiaries – Trigen Cinergy Solutions LLC. In 2004, I took a position with CEI South[1] as a Power Plant Director responsible for providing leadership and management focused on safe, environmentally responsible, reliable, and efficient electric generation. I was named to my current position in May 2021.

[1] For the sake of clarity, my testimony refers to CEI South, even though in certain situations, I may be referring to one of CEI South's predecessor companies.

Q. WHAT ARE YOUR PRESENT DUTIES AND RESPONSIBILITIES AS DIRECTOR OF POWER SUPPLY SERVICES?

A. I have responsibility for the following functions: Wholesale Power Marketing, Market Settlements, and Market Development; and serve as the Commercial Lead for negotiations and dealings with generation resources. This aligns areas related to generation and wholesale market initiatives and our future generation plans.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE INDIANA UTILITY REGULATORY COMMISSION (THE "COMMISSION")?

A. Yes, I have provided testimony before the Commission in Cause No. 45501 in support of Petitioner's request for: (i) a Certificate of Public Convenience and Necessity ("CPCN") to purchase and acquire, indirectly through a Build Transfer Agreement ("BTA"), a solar facility in Posey County, Indiana ("Posey County Solar Project"); and (ii) authorization to enter into a Power Purchase Agreement ("PPA") to purchase energy and capacity from a 100 megawatts alternating current ("MWac") solar project in Warrick County ("Warrick County Solar Project"). I also provided testimony before the Commission in Cause No. 45564 in support of CEI South's request for a CPCN to construct two natural gas Combustion Turbines ("CTs") providing approximately 460 MW of capacity.

II. PURPOSE & SCOPE OF TESTIMONY

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

A. My testimony supports Petitioner's request for an Order in this Cause issuing CEI South a CPCN to purchase and acquire, indirectly through a BTA, a solar facility in Pike County, Indiana, that will have an aggregate nameplate capacity of approximately 130 MWac (the "Pike County Solar Project") pursuant to Ind. Code ch. 8-1-8.5. I explain CEI South's decision to pursue the Pike County Solar Project and describe the Company's utilization of the 2020 Renewable Resources Request For Proposal ("2020 Renewable RFP") to identify and select this viable, competitive renewable project as well as the benefits of integrating this project into CEI South's Generation Transition Plan. I describe the pressures on pricing that have transpired since the issuance of the 2020 Renewable RFP and why I believe the pricing for the Pike County Solar Project continues to be reasonable as well as why I believe it is necessary that CEI South pursue the project at this time. To that end, I provide a high-level overview of the significant terms of the BTA. I describe

how the Pike County Solar Project benefits the system and share how the project impacts CEI South's MISO Independent System Operator ("MISO") Planning Reserve Margin Requirements ("PRMR"). I also describe how the proposed Levelized Rate was selected and how it compares to current prices for solar energy. Finally, I support an attachment summarizing the evidence CEI South has provided to meet the requirements of GAO 2022-1.

Q. ARE YOU SPONSORING ANY ATTACHMENTS TO YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes. I sponsor the following attachments:

- Petitioner's Exhibit No. 2, **Attachment FSB-1 (CONFIDENTIAL)**: Build Transfer Agreement ("BTA") with Crosstrack Solar Holdings LLC ("Crosstrack");
- Petitioner's Exhibit No. 2, **Attachment FSB-2**: 2020 Renewable RFP;
- Petitioner's Exhibit No. 2, **Attachment FSB-3** (CONFIDENTIAL): 2020 Renewable RFP Proposal Scoring;
- Petitioner's Exhibit No. 2, **Attachment FSB-4** (CONFIDENTIAL): 2022 All-Source RFP Solar Pricing; and
- Petitioner's Exhibit No. 2, **Attachment FSB-5**: Summary of Evidence Provided in Accordance with GAO 2022-1.

Q. WERE THESE ATTACHMENTS PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. The BTA was negotiated and prepared under my supervision. The 2020 Renewable RFP and the scoring sheet were prepared before I was named to my current position, but I have reviewed and confirmed both attachments in my role as Director of Power Supply Services. The 2022 All-Source RFP Solar Pricing was prepared under my supervision. I prepared or supervised the preparation of the Summary of Evidence Provided in Accordance with GAO 2022-1.

III. OVERVIEW OF GENERATION TRANSITION PLAN AND UPDATE

Q. PLEASE PROVIDE AN OVERVIEW OF CEI SOUTH'S GENERATION TRANSITION PLAN (THE "PLAN").

A. The Company's 2019/2020 Integrated Resource Plan ("IRP") identified a Preferred Portfolio, which calls for timely retirement of certain existing generation resources and replacement of the capacity derived from those units with new generation resources procured competitively and would provide a lower cost and reduced risk future for customers as compared to a business as usual approach. In fact, nearly two-thirds of the energy included in Preferred Portfolio will be generated from renewable resources. As further discussed by Petitioner's Witness Mathew A. Rice, implementation of the Preferred Portfolio is expected to save electric customers an estimated $320 million over the 20-year planning period. The Generation Transition Plan was designed to effectuate the transition and requires an initial step of identifying and selecting approximately 700 – 1,000 MWac of solar generation, 300 MWac of wind generation, and approximately 460 MW of natural gas Combustion Turbine generation.

Timing of this initial step is important since a generation transition period is a lengthy process typically lasting at least 3.5 years including project solicitation, evaluation and negotiation, the MISO Interconnection Queue process, development tasks such as obtaining site control and permitting, construction, and various other factors. As such, there will be a period -- between when the Company's coal generation units are retired and the new generation comes online -- during which CEI South will need to rely on the capacity and wholesale energy market. To minimize this dependence period and cost to customers, CEI South has acted immediately to identify projects that could come online in the 2023-2025 timeline. This timeframe is critical since additional baseload units in the same MISO Local Resource Zone (CEI South's Local Resource Zone 6) are expected to be taken offline in relatively the same timeframe, thereby increasing the risk of reliance on the wholesale energy and capacity market.

Q. PLEASE PROVIDE AN UPDATE OF CEI SOUTH'S GENERATION TRANSITION PLAN.

A. Thus far CEI South has sought Commission approval of several components of the Generation Transition Plan. On October 27, 2021, in Cause No. 45501, the Commission authorized CEI South to: (i) acquire a solar power electric generating facility in Posey County, Indiana, through a BTA with an aggregate nameplate capacity of approximately 300 MWac (the "Posey County Solar Project") pursuant to Ind. Code ch. 8-1-8.5; and (ii) enter into a 25-year PPA to purchase energy and capacity from a solar project being constructed in Warrick County, Indiana, with an aggregate nameplate capacity of 100

MWac (the "Warrick County Solar Project"). Due to industry wide supply chain cost pressures, the Posey County Solar Project has now been downsized to approximately 191 MWac. CEI South intends to submit the amended BTA to the Commission for approval later this year.

More recently, on May 4, 2022, in Cause No. 45600, the Commission authorized CEI South to enter into PPAs to purchase energy and capacity from a 185 MW solar project in Vermillion County, Indiana (the "Vermillion County Solar Project"), and from a 150 MW solar project in Knox County, Indiana (the "Knox County Solar Project").

In addition to the foregoing renewable projects, on June 28, 2022, in Cause No. 45564, the Commission issued CEI South a CPCN to construct two new natural gas CTs, which will provide approximately 460 MW of capacity.

Similar to several of the aforementioned projects, which are expected to come online in the 2023-2025 timeframe, the Pike County Solar Project is slated to come online by March 31, 2025 and also is crucial to meeting the Company's capacity needs.

Q. ARE ANY OF THE FOREGOING PROJECTS IN SERVICE?

A. No. As I mentioned above, the Posey County Solar Project is downsizing from 300 MWac to approximately 191 MWac. This decision was based in large part on supply chain issues across the energy industry, as well as escalating commodity costs that have impacted the project pricing and schedule. [redacted] but it is unlikely to come online in the timeframe anticipated in Cause No. 45501.

Unfortunately, supply chain delays have affected manufacturers worldwide. The developers for the PPA projects, approved in Cause Nos. 45501 and 45600, [redacted] Accordingly, while CEI South has made real progress getting projects approved, getting the projects in service and available to meet the Company's capacity needs has been more challenging. It is crucial that CEI South continue to work to bring these projects online and to identify new projects to meet system needs.

Q. HOW DOES THE PIKE COUNTY SOLAR PROJECT ALIGN WITH CEI SOUTH'S GENERATION TRANSITION PLAN?

A. The Pike County Solar Project is an important part of the first phase of the Generation Transition Plan. With the downsizing of the Posey County Solar Project, CEI South has approximately 626 MWac of approved solar generation capacity – assuming [redacted] and each of the PPA projects is delivered as agreed upon. This amount of solar capacity is below the 700 to 1,000 MWac solar generation identified in the Generation Transition Plan. If approved, the Pike County Solar Project will add 130 MWac of generation capacity to help meet the goals identified in the Plan.

Q. PLEASE DESCRIBE PETITIONER'S EXHIBIT NO. 2, ATTACHMENTS FSB-1 (CONFIDENTIAL).

A. Petitioner's Exhibit No. 2, **Attachment FSB-1 (CONFIDENTIAL)** is a copy of the BTA with Crosstrack. As further discussed below, the Pike County Solar Project was identified through the competitive procurement process and the terms of the BTA were reached after arms-length negotiations.

IV. COMPETITIVE PROCUREMENT PROCESS

Q. PLEASE BRIEFLY DESCRIBE THE COMPANY'S COMPETITIVE PROCUREMENT PROCESS THAT RESULTED IN THE EXECUTION OF THE BTA.

A. To date, the Company has conducted three RFPs. CEI South retained 1898 & Company, a division of Burns & McDonnell Engineering Company, Inc. ("1898 & Company"), to act as its agent in managing each of those RFPs and the RFP process. First, in connection with the preparation of its 2019/2020 IRP, CEI South conducted an All-Source RFP on June 12, 2019 (the "2019 All-Source RFP") for 10 to 700 MWac of capacity from all sources. That 2019 All-Source RFP was used to select the initial projects for its Generation Transition Plan – the Posey County Solar Project and Warrick County Solar Project (subsequently approved in Cause No. 45501). Then, on August 12, 2020, CEI South issued its second RFP – the 2020 Renewable RFP – seeking a combination of wind, solar, and solar + storage resources to meet the need identified in the Plan. As with the 2019 All-Source RFP, the 2020 Renewable RFP was used to help Petitioner identify replacement generation capacity beginning in 2023. Specifically, Petitioner selected the

Vermillion County Solar Project and Knox County Solar Project PPAs (which were approved in Cause No. 45600) as a result of the 2020 Renewable RFP process; as well as the Pike County Solar Project, which is the subject of this Cause and balances the BTA/PPA mix. On May 11, 2022, CEI South issued a new (its third) RFP (the "2022 All-Source RFP") seeking a combination of resources including renewables (wind, solar and battery storage), thermal and demand-side resources, and short-term capacity. As I will discuss further below, bidders submitted initial proposals on July 5, 2022. Projects submitted in response to the 2022 All-Source RFP must provide fully accredited capacity no later than March 1, 2027.

Q. HOW WAS THE 2020 RENEWABLE RFP, FROM WHICH THE PIKE COUNTY SOLAR PROJECTS WAS SELECTED, MANAGED AND ADVERTISED?

A. 1898 & Company managed the RFP process and served as a direct interface for all RFP communications. 1898 & Company has provided consulting services to various utilities, developers, and other organizations involving power supply proposal requests totaling more than 25,000 MW. 1898 & Company distributed the 2020 RFP by: (1) posting notice on the Company's RFP website; (2) sending notice of its issuance to known IRP stakeholders; (3) advertising notice of its issuance in the North American Energy Markets Association (140 members); and (4) directly emailing notice to the Company's All-Source RFP participants, Petitioner's industry contacts and stakeholders as well as to an internal 1898 & Company RFP contact list (containing more than 700 industry contacts). Respondents were directed to interface with 1898 & Company for all RFP communications including questions, clarification of RFP issues, and all other matters related to RFP bid submittal.

Q. WHAT WERE THE KEY PARAMETERS OF THE 2020 RENEWABLE RFP?

A. Key parameters of the RFP were as follows:

Proposal type	Both asset purchases and power purchase agreements
Total amount of wind	300 MW
Total amount of solar (or solar paired with storage)	700-1,000 MW
Minimum capacity	50 MW for wind and solar 12.5 MW/50 MWh for paired storage
Transfer/contract start date	Preferred prior to MISO 2023/2024 PRA
MISO generator interconnection	Existing GIA or already in MISO GI Queue
MISO transmission service	NRIS is required
Project attributes	All capacity, energy, ancillary services, and renewable energy credits related to the resource should be offered

The RFP is attached to my testimony as Petitioner's Exhibit No. 2, **Attachment FSB-2**.

Q. DOES THE COMPETITIVE PROCUREMENT EVALUATION PROCESS HAVE VALUE FOR CUSTOMERS?

A. Yes. The All-Source and 2020 Renewable RFPs and the resulting evaluation processes benefited customers by allowing Petitioner to gain knowledge of the widest range of feasible projects and identify the best projects at the best available prices. CEI South's evaluation process ensured projects were compared based on similar reliability, timing, price, and maturity attributes and were evenly measured against each other. That said, as I will discuss further below, it is important to recognize that the proposals submitted in response to the RFP always change during the negotiation process. Accordingly, while the RFP process is valuable in identifying feasible projects and narrowing down the best projects, it is not the end of the process – there is much more involved in bringing a project online.

Q. PLEASE SUMMARIZE THE RESPONSES SUBMITTED TO THE CEI SOUTH'S 2020 RENEWABLE RFP.

A. Twenty-five individual respondents submitted complete responses resulting in 232 proposals, 191 of which were for projects located in Indiana. The proposal types were broken out as follows: 154 solar (31 asset purchase + 113 PPA + 10 other), 60 solar + storage, and 18 wind. While the proposals contained altogether approximately 40 GW of total installed capacity, many of the projects were included in multiple proposals such that there were approximately 9 GW of unique project installed capacity from 53 unique

projects. As I will discuss in greater detail below, the Pike County Solar Project was identified as a top project based on its cost, location within CEI South's assigned service territory, interconnection to an existing CEI South substation and transmission system, and placement in the MISO Interconnection Queue Cycle.

Q. HOW WERE SUBMITTED PROPOSALS GROUPED, EVALUATED, AND SCORED?

A. 1898 & Company initially reviewed proposals for completeness and contacted respondents, as needed, to clarify proposal attributes or request additional information where details were incomplete using a dedicated RFP e-mail address. CEI South and 1898 & Company collaboratively evaluated, scored, and ranked each complete proposal based on established quantitative and qualitative scoring criteria that assessed reliability, cost, and certainty. This assessment included: Levelized Cost of Energy ("LCOE"), energy settlement location, interconnection and development status, and project risk factors like credit worthiness, development experience, delivery date, project site control status, permits, and zoning. The 2020 Renewable RFP, Petitioner's Exhibit No. 2, **Attachment FSB-2**, sets forth the proposal requirements and scoring criteria. During the evaluation phase, some proposals were excluded from the ranking if they were found to not meet all the requirements of the 2020 Renewable RFP such as not having a queue position or having a late commercial operation date. The Company also excluded out-of-state proposals since there were so many competitive in State proposals.

The 2020 Renewable RFP scoring and evaluation process was used to determine which proposals were most capable of providing CEI South customers with a safe, reliable, and affordable power supply. The solar proposals were grouped by type (asset purchase, PPA), and the top half scoring proposals were ordered by LCOE and underwent due diligence. Please see the scoring summary attached in Petitioner's Exhibit No. 2, **Attachment FSB-3 (CONFIDENTIAL)**.

Q. HOW DID CEI SOUTH STANDARDIZE EVALUATION BETWEEN DIFFERENT TYPES OF PROPOSALS, ESPECIALLY BETWEEN PPAS AND BTAS?

A. Due to varying term lengths in the PPA and BTA proposals, it was important to compare the projects on a consistent basis when considering total project costs and benefits. This is especially relevant when evaluating PPA and BTA proposals. For instance, most BTA proposals had an asset life of 35 years, while PPA proposal terms were 30 years or less.

Evaluating all proposals over a 35-year term provided an equitable measurement of the proposals when considering the total economic value to CEI South's customers over a common period.

Therefore, to normalize the LCOE over the 35-year period between BTAs and PPAs with terms shorter than 35 years, a market replacement methodology was adopted using the 2019/2020 IRP forecasts for energy price (Locational Marginal Pricing or "LMP") and capacity price in the MISO wholesale market. The forecasted pricing was applied to the balance of the 35-year term for each proposal's expected generation output. The 35-year LCOE was used for evaluation purposes to have a standard measure of comparison between PPAs of different term lengths, and build-transfer or asset purchase agreements.

Q. PLEASE DESCRIBE FURTHER THE MANNER IN WHICH CEI SOUTH EVALUATED PRICING FOR THE PPA AND BTA PROPOSALS USING LCOE.

A. CEI South undertook an exhaustive process of comparing the various proposals received from the 2020 Renewable RFP results and grouping PPAs and BTAs to ensure like comparison. For purposes of comparing economic value of different proposals, LCOE was compared across proposal types and groupings by normalizing the LCOE in the following ways:

- While most proposals included "delivered" pricing, which means essentially that the cost risk of congestion in the transmission system related to the plant output was already included in the PPA price, [redacted] was used to compare proposals that did not include delivered pricing to account for congestion costs over the term of the contract;
- As mentioned briefly above, PPA proposals with different term lengths were normalized by adding the LCOE of market replacements after expiration of the PPA contract until the end of 35 years and BTA proposals were likewise evaluated using a 35-year LCOE; and
- The impacts of imputed debt also were factored into the LCOE calculation of PPA proposals; specifically, the equity compensation required to offset financial impacts due to long-term debt equivalence was included in determining the LCOE for PPA projects.

Q. IS USING A 35-YEAR LIFE TO EVALUATE THE BTA CONSISTENT WITH HOW CEI SOUTH HAS TREATED SIMILAR PROJECTS?

A. Yes. CEI South's Troy Solar Project that was approved in Cause No. 45086 (Order dated March 20, 2019) was modeled using a 35-year period. The OUCC noted that the 35-year project life of the Troy Solar Project was a benefit in that it "offer[ed] ratepayer protection from increases in project construction or O&M costs over the 35 year time period." The Posey County Solar Project approved in Cause No. 45501 also was modeled using a 35-year life period.

Q. WAS THE PROCESS USED TO EVALUATE THE RESULT OF THE 2020 RENEWABLE RFP CONSISTENT WITH THE PROCESS USED BY CEI SOUTH PREVIOUSLY OR OTHER UTILITIES?

A. Yes, CEI South used a similar process in evaluating its 2019 All-Source RFP; and the process used by CEI South is consistent with the process used by other utilities in evaluating power supply options. LCOE is a typical quantitative measure used to compare proposals on an equivalent economic basis especially when the options differ in attributes such as size, pricing, operating characteristics, ownership structures, etc. Qualitative criteria considered in this RFP evaluation also were consistent with industry practices, such as the preference for projects showing greater maturity in the development cycle, project and energy settlement location, as well as relevant developer experience.

Q. PLEASE OVERVIEW THE FACTORS, APART FROM COST, THAT CEI SOUTH USED TO QUALITATIVELY EVALUATE THE RESOURCE BIDS THAT LED TO SELECTION OF THE PIKE COUNTY SOLAR PROJECT.

A. While several qualitative criteria were used to evaluate proposals, they fall into three broad categories: (1) Energy Settlement Location, (2) Interconnection Status, and (3) Project Risk Factors.

The Energy Settlement Location criteria assessed reliability and cost risk related to congestion and delivery of energy to CenterPoint Indiana South's load node ("SIGE.SIGW"). In particular, minimal separation between the project interconnection and the load it serves is a favorable reliability attribute. Projects located within the Company's service territory, or that otherwise assumed congestion and delivery risk by pricing energy delivered to the Company's load node, received maximum points for Energy Settlement

Location. Many of the proposals were either on-system or assumed congestion and delivery risk as "delivered" pricing in their proposal. There were other competitive and high-quality proposals that priced delivery to the point of interconnection ("busbar"). To economically compare the two types of proposals, busbar and delivered, the Company undertook analysis of typical price separation as well as consultation with subject matter experts to identify a fair but sufficiently conservative value of the congestion risk associated with busbar PPAs. The [redacted] related to cost risk of congestion (described above) was determined to be a fair and conservative monetary value for the risk.

Interconnection Status evaluated the risk to projects of increasing network upgrade and affected system costs. Projects with completed interconnection agreements or that were further along in the MISO Interconnection Queue were generally favored over projects just starting out in the queue and thus having less certainty related to interconnection and system upgrade costs.

The Project Risk Factors evaluated various other operational and control risk factors associated with the project such as project parent company creditworthiness, developer experience, and project site control. Further detail and discussion on these evaluation criteria are provided in the text of the 2020 Renewable RFP.

As further discussed below, the Pike County Solar Project has favorable characteristics consistent with each of the foregoing factors given its location, interconnection to a CEI South substation, placement in the MISO 2019 Interconnection Queue Cycle and the proven track record of the project parent company.

Q. ASIDE FROM THE PROJECT SELECTION PROCESS DESCRIBED ABOVE, HOW ELSE DID CEI SOUTH EVALUATE THE COMPETITIVENESS OF THE PIKE COUNTY SOLAR PROJECT?

A. CEI South engaged directly with the developers. CEI South compared project maturity, development risk, interconnection risk, project delivery timing, and price certainty between the top projects under consideration. CEI South evaluated the MISO Interconnection Queue physical point of interconnection and queue cycle placement.

Q. DOES THE USE OF THE RFP PROCESS NECESSARILY [redacted] DURING NEGOTIATIONS?

A. No. To the contrary, we have seen that proposals made during the RFP process (both the All-Source RFP and the 2020 Renewable RFP) [redacted] during the negotiation process. As such, [redacted]

V. SELECTION OF THE PIKE COUNTY SOLAR PROJECT

Q. FROM THE RESULTS OF THE 2020 RENEWABLE RFP, WERE ANY PROPOSALS SELECTED AND CARRIED FORWARD?

A. Yes, using the previously described process, CEI South scored and ranked the bids to identify the top proposals that merited further analysis and consideration; and then engaged the top-ranked bidders to discuss their proposal and clarify aspects of the proposals under consideration. After full evaluation, CEI South selected the Vermillion and Knox County Solar Projects (approved in Cause No. 45600) to be carried forward; as well as the Pike County Solar Project for which CEI South is requesting approval in this proceeding. Selecting these projects was consistent with CEI South's plan to have a mix of PPAs and utility-owned assets.

Q. WHY WAS THE PIKE COUNTY SOLAR PROJECT IDENTIFIED AS A PROJECT WORTHY OF MOVING FORWARD?

A. From the 2020 Renewable RFP, there were a total of 28 solar BTA proposals of which 17 were incompatible with the requirements of the RFP and/or were located off-system. Of the 11 remaining BTA proposals, three were acquired by other parties, and three others assumed interconnection reuse of the A.B. Brown Units 1 & 2 and/or F.B. Culley Unit 2 rather than the standard MISO interconnection process. CEI South continues to investigate the RFP proposals that assumed reuse of CEI South interconnection rights as an effective way to acquire a project; however, the reuse proposals were not selected to move forward based on the Company's plan for the two CTs, which were approved in Cause No. 45564, to reuse the A.B. Brown Unit 1 & 2 interconnection rights; and the Company's need to retain flexibility and continued use F.B. Culley Unit 2's interconnection rights through 2025 if the unit operates beyond 2023. Ultimately, the removal of the

foregoing projects left CEI South with five projects. When evaluating these five projects on cost, project/development certainty, location, and developer experience, the Pike County Solar Project was overall the best BTA project.

Q. OF THE REMAINING BTA PROJECTS, WHY WAS THE PIKE COUNTY SOLAR PROJECT THE OVERALL BEST BTA PROJECT?

A. There were several reasons. First, the expected LCOE of the BTA was the 2nd lowest of the remaining BTA proposals. Aside from pricing considerations, the Pike County Solar Project is located in CEI South's assigned service territory and, in fact, will interconnect to CEI South's transmission system via the existing Cato 138 kV substation. Crosstrack has obtained the rights to the land rights for approximately 2,300 acres for the Project and construction is expected to commence in the first half of 2023 in order to achieve a Guaranteed Substantial Completion Date ("COD") by March 31, 2025. Furthermore, the Pike County Solar Projects is in the 2019 MISO Interconnection Queue Cycle and expected to have a signed Generator Interconnection Agreement ("GIA") near the end of 2022. As Witness Ben Vallejo discusses in further detail, Pike County Solar Project will qualify for the 30% Investment Tax Credit ("ITC").

VI. EVENTS IMPACTING SOLAR PRICES THAT OCCURRED AFTER THE 2020 RENEWABLE RFP

Q. PLEASE DESCRIBE THE SIGNIFICANT CHANGES IN THE RENEWABLE INDUSTRY THAT HAVE CAUSED PRICES TO INCREASE SINCE THE 2020 RENEWABLE RFP.

A. After years of declining costs, solar prices jumped in 2021 as broad economic challenges — including supply chain constraints — hit the industry. A portion of the surging cost is the result of a jump in polysilicon cost, which is a key component in solar systems. The average spot price for polysilicon has increased approximately 300% from pre-pandemic levels. The new record level of demand cannot be kept up with by traditional polysilicon manufacturers as their supply was first shut down at the onset of the pandemic, then was slowed further by earthquakes throughout China. Polysilicon cost represents approximately 13% of the cost of the Pike County Solar Project.

Q. HAVE THE COST OF ANY OTHER COMPONENTS OF SOLAR PROJECTS INCREASED?

A. Yes. Other components of solar systems including copper, aluminum and glass have also increased. The average spot price for copper has jumped by more than 60% since the start of 2020. Aluminum prices are also up nearly 40% year over year as Chinese production shutdowns have put a strain on supply. Although glass makes up a smaller portion of the cost of a solar project, glass prices are at an all-time high. Shipping and labor costs also have increased significantly. CEI South Witness Carroll further describes the cost pressures facing the solar construction business and how they have impacted the cost of the Pike County Solar Project.

Q. WHAT PORTION OF THE COST OF A SOLAR PROJECT DO MODULE COSTS REPRESENT?

A. The price of solar modules is crucial as solar modules make up approximately 41% of total solar project cost.

Q. DOES THE PRICING FOR THE PIKE COUNTY SOLAR PROJECT REFLECT THESE CHANGES IN THE SOLAR MARKET?

A. Yes. As I will discuss below, the pricing for the Pike County Solar Project [redacted] which is to be expected given the current market.

Q. HAVE THERE BEEN ANY OTHER ISSUES IMPACTING PRICES IN THE INDUSTRY.

A. Yes. On February 8, 2022, pursuant to section 781(b) of the Tariff Act of 1930 and 19 CFR 351.226(c), Auxin Solar Inc filed a circumvention inquiry request alleging that solar cells and modules completed in Cambodia, Malaysia, Thailand, or Vietnam ("CMTV") using parts and components manufactured in China are circumventing established duties and, accordingly, should be subject to the tariffs in the initial Orders. The merchandise covered by the initial Orders are crystalline silicon photovoltaic cells, and modules, laminates, and panels, consisting of crystalline silicon photovoltaic cells, whether or not partially or fully assembled into other products, including, but not limited to, modules, laminates, panels and building integrated materials. Based on statutory rules, if anti-circumventing tariffs are imposed, they would retroactively apply to imports of solar cells and modules from the CMTV countries from April 1, 2022, to as far back as November

2021, meaning U.S. importers of such products do not currently know their exact costs. With just the announcement of the investigation, U.S. companies halted most of their imports of solar cells and modules from the CMTV countries, which provide 80 percent of foreign solar cells and modules to the United States, due to uncertainty over the exact prices and costs of their imports.

On June 6, 2022, the President of the United States issued an Executive Order invoking the Defense Production Act to increase the production of solar panels. Among other things, the Executive Order suspended the tariff affecting imports from the CMTV counties for a two-year bridge period while other efforts designed to increase domestic solar power production are implemented. The goal of the Executive Order is to pause the tariff price increase that could impact the market as a result of the anti-circumvention investigation.

In addition to the anti-circumvention investigation, on June 21, 2022, the Uyghur Forced Labor Prevention Act ("UFPLA") went into effect. This legislation bans all imported goods from the Xinjiang region of China unless suppliers can prove the products were not made with forced labor. The solar industry had already been navigating a Withhold Release Order ("WRO") on silicon-based products made by Hoshine Silicon located in the Xinjiang region since June 2021; however, the ULFPA will supersede the WRO and will continue to be under scrutiny as it has been estimated that approximately 50 percent of the world's polysilicon comes from the Xinjiang region. While most of the major solar module suppliers have supposedly found sources of polysilicon outside of Xinjiang, the price of solar panel modules has increased based on less supply availability.

Q. EVEN WITH THE FOREGOING PRICING CHANGES DO YOU BELIEVE THAT THE 2020 RENEWABLE RFP STILL SUPPORTS THE SELECTION OF THE PIKE COUNTY SOLAR PROJECT?

A. Yes. CEI South needs to continue to invest in generation sources to meet the needs identified in the Generation Transition Plan. The economic challenges I mention above are an industry wide issue, not just a Pike County Solar Project issue, with every project facing the same challenges. In other words, every project submitted in the 2020 Renewable RFP would have faced similar pricing issues. Moreover, prices are not likely to decline in the future. If anything, they will merely stabilize. As I discuss further below, through the negotiation process, CEI South was able to negotiate for a price that is

favorable in the current market as supported by CEI South Witness Erin Carroll and the recently received responses to the 2022 All-Source RFP.

VII. NEGOTIATION OF A COMPETITIVE PRICE FOR THE PIKE COUNTY SOLAR PROJECT

Q. WERE ATTEMPTS MADE TO MITIGATE THE IMPACT OF THE RISING PRICES FOR SOLAR FACILITIES IN THE NEGOTIATIONS FOR THE PIKE COUNTY SOLAR PROJECT?

A. Yes. Negotiations for the Pike County Solar Project were underway beginning in approximately March of 2021. CEI South had already vetted the projects through direct engagement with the developers as described above and the changes described above in the solar industry were occurring. Negotiation with Crosstrack on an extensive term sheet for the Pike County Solar Project culminated with an executed term sheet in late September 2021. Negotiations to finalize the terms of the BTA continued until executed in July 2022. The BTA contains a number of provisions that are designed to insulate both parties in the event of future price increases. Among other things, we negotiated [redacted] CEI South has the right to terminate the BTA under certain circumstances [redacted]. In addition, there must be a ruling in the anti-circumvention proceeding that is satisfactory to both CEI South and Crosstrack.

Q. [redacted]

A. [redacted] I discuss the global events that have impacted the price of the Pike County Solar Project above and explain why CEI South believes the price continues to be competitive.

Q. [redacted]

A. [redacted]

Q. IS CEI SOUTH SEEING CURRENT SOLAR OFFERINGS WITH PRICES COMPARABLE TO THOSE SUBMITTED IN THE ORIGINAL 2019 ALL-SOURCE RFP AND THE SUBSEQUENT 2020 RENEWABLE RFP?

A. No. Prices have escalated [redacted]

Q. HOW DOES THE PRICE OF THE PIKE COUNTY SOLAR PROJECT COMPARE TO THE PROJECTS SUBMITTED IN RESPONSE TO THE 2022 ALL-SOURCE RFP?

A. Preliminary review of the 2022 All-Source RFP proposals for projects greater than 100 MW (Petitioner's Exhibit No. 2, **Attachment FSB-4**) indicates the Pike County Solar Project [redacted] The [redacted] greater than 100MW solar purchase proposals average approximately [redacted] which is [redacted] the approximate [redacted] for Pike County Solar Project; and the [redacted] greater than 100MW solar PPA proposals average approximately [redacted] However, removing the [redacted] the average PPA rate is approximately [redacted] the Levelized Rate proposed in this Cause for Pike County Solar Project and [redacted] the market replacement methodology discussed earlier to normalize the LCOE over the 35-year period, [redacted] the cost of imputed debt or the PPA [redacted] discussed above.

Q. GIVEN THE INCREASE IN COSTS AND OTHER PRESSURES FACING THE SOLAR INDUSTRY, WOULD IT HAVE MADE SENSE TO POSTPONE THE NEGOTIATIONS

AND SELECT ANOTHER SOLAR PROJECT WHEN CEI SOUTH PREPARES ITS NEXT INTEGRATED RESOURCES PLAN?

A. No. [redacted] Global solar module prices will take another two years before they stabilize following the current supply chain tightness. Even then, it is possible that costs may level off, but I don't think it would be prudent to hedge on prices decreasing by a substantial amount. Moreover, even if the prices were to decrease in the next four years, as CEI South Witness Vallejo discusses, the ITC will decrease from 30% to 10%, which will only increase the LCOE.

Q. ARE THERE OTHER REASONS THAT YOU BELIEVE IT WOULD NOT HAVE MADE SENSE TO POSTPONE PURSUING THE SOLAR PROJECTS IDENTIFIED AS NECESSARY IN THE GENERATION TRANSITION PLAN?

A. Yes. Put simply, CEI South is going to need capacity in the short term. The retirement of A.B. Brown Units 1 & 2 and F.B. Culley Unit 2 and the anticipated exit of the Joint Operating Agreement for Warrick Unit 4 will create a capacity gap to achieve the MISO PRMR. CEI South needs to add resources in the near term in to avoid too much reliance on market capacity.

Q. IN YOUR OPINION, WAS CEI SOUTH ABLE TO OBTAIN AN ARRANGEMENT THROUGH THE NEGOTIATION PROCESS THAT IS FAVORABLE?

A. Yes. In my opinion, CEI South was able to negotiate a reasonable arrangement despite the current challenges in the market for large scale solar projects. Global solar power developers are slowing down project installations because of a surge in costs for components, labor, and freight. Notwithstanding these challenges and the limited availability of projects, the Pike County Solar Project remains competitive as CEI South was able to negotiate to purchase a reasonably priced solar project.

Q. WHAT ADDITIONAL SUPPORT DO YOU HAVE FOR YOUR OPINION THAT THE PIKE COUNTY SOLAR PROJECT IS "REASONABLY PRICED?"

A. CEI South retained Wood Mackenzie to review the escalation of price for the Pike County Solar Project. Wood Mackenzie determined that the escalation of the BTA price aligns with their low forecast for the market. CEI South Witness Carroll will discuss the Wood Mackenzie analysis in greater detail.

VIII. THE PIKE COUNTY SOLAR PROJECT AND NEGOTIATED TERMS OF THE BTA

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE PIKE COUNTY SOLAR PROJECT.

A. Crosstrack originally bid the Pike County Solar Project into the 2020 Renewable RFP as "Cato Solar" and subsequently changed the name to Crosstrack Solar. The Crosstrack Solar facility, which I refer to as Pike County Solar Project, is a 130 MWac project located in Pike County, Indiana to be interconnected to CEI South's transmission system at Cato 138 kV substation. The Pike County Solar Project originally was bid with a target completion date in 2023; however, the timeline was re-aligned during the contracting phase due to ongoing MISO delays and supply chain constraints. The decision to extend the timeline to March of 2025 was also made possible by the extension of ITC eligibility due to COVID delays so the Pike County Solar Project will still qualify for the 30% ITC as planned.

Q. PLEASE DESCRIBE THE STATUS OF THE PIKE COUNTY SOLAR PROJECT.

A. The Pike County Solar Project is in the 2019 MISO Interconnection Queue Cycle and is expected to have a signed Generator Interconnection Agreement near the end of 2022. Land leasing rights have been obtained and Pike County permitting has been approved. CEI South performed extensive due diligence to ensure that the Pike County Solar Project will qualify for the 30% ITC.

Q. PLEASE DESCRIBE THE TRANSACTION STRUCTURE FOR THE PIKE COUNTY SOLAR PROJECT.

A. The Pike County Solar Project will be fully developed, engineered, procured, and constructed by Crosstrack and then acquired by CEI South in a transfer of the Project Company – Crosstrack Solar Holdings LLC – which is a Special Entity established to facilitate ownership transfer of the Project. Under the BTA, Crosstrack will own the project until it achieves mechanical completion, upon which time, CEI South will acquire the project and all of its attributes which are being held in the subsidiary limited liability corporation. The BTA sets forth Crosstrack's obligations to bring the Pike County Solar Project to final completion after the transaction closing occurs. This structure is necessary to enable CEI South to claim the tax attributes of the Pike County Solar Project. The BTA may be terminated in the event approvals requested in this proceeding are not granted by the Commission in a timely manner. The BTA sets forth the payment schedule and

holdbacks, performance security, liquidated damages and other typical attributes designed to minimize risk to CEI South's customers.

Q. IS TIMELY APPROVAL OF THE PIKE COUNTY SOLAR PROJECT IMPORTANT?

A. Yes. Development of a new generation resource is a lengthy process. While CEI South has taken several steps to minimize the risk associated with the process, obtaining quick approval is one way to reduce the risk even further. IURC approval is a key gate that must be met before the developer will authorize the start of construction. In addition, timely approval is important to allow the project to get started as early as possible which will maximize the chances of early completion and the avoidance of needing to rely on market purchases before the Pike County Solar Project achieves full operation. Finally, early approval also maximizes the chances that the Pike County Solar Project can be completed early which helps ensure that the Pike County Solar Project remains eligible for the full ITC tax benefit. The Firm Date of April 3, 2023 is contingent on Commission approval.

Q. PLEASE DESCRIBE ANY ASSETS AND/OR RIGHTS PETITIONER WOULD ACQUIRE UNDER THE BTA.

A. Because this will involve the purchase of a membership interest, the BTA transfers the project and all of its related assets such as properties, rights and interests of every kind and nature which includes books and records, the project site, project contracts, land leases and real property agreements, project fixtures and equipment that include the solar panels and inverters, project improvements, intellectual rights associated with the project, project permits, all interconnection rights and any warranties associated with the equipment and workmanship of the project.

Q. PLEASE PROVIDE AN OVERVIEW OF SIGNIFICANT TERMS OF THE BTA FOR THE PIKE COUNTY SOLAR PROJECT.

A. The substantive terms of the BTA are confidential and some of the more significant of those terms are:

► The purchase price will be determined by [redacted] CEI South may elect to terminate the BTA [redacted] except for an adjustment for [redacted] changes in law [redacted]

[redacted]

- The Pike County Solar Project must deliver [redacted]
- Long-term land lease expenses [redacted]
- The Pike County Solar Project must meet certain [redacted] Conditions – the set of all necessary conditions to begin construction on the project -- no later than April 3, 2023, [redacted] Penalties apply [redacted]
- [redacted]

Q. PLEASE FURTHER EXPLAIN [redacted] OBTAINED THROUGH NEGOTIATIONS.

A. CEI South was able to negotiate [redacted] for the Pike County Solar Project. [redacted] In this case, the purchase price has been negotiated [redacted]

Q. WHAT IS THE ADVANTAGE OF [redacted]

A. [redacted] In my view, [redacted] provides a significant advantage to

CEI South and its customers in this market. We have negotiated [redacted]

Q. DOES CEI SOUTH ANTICIPATE A NEED TO MAKE INVESTMENTS IN THE PROJECT BEYOND THOSE DESCRIBED ABOVE?

A. No. However, situations such as, but not limited to, *force majeure* or extended forced outages where the plant is unable to produce for an extended period of time, could result in the need for additional investment.

Q. DOES THE BTA PROVIDE ANY FINANCIAL ASSURANCE THAT CROSSTRACK WILL MEET ITS OBLIGATIONS?

A. Yes. [redacted] Crosstrack is also liable for Delay Liquidated Damages [redacted]

Q. DOES THE PURCHASE PRICE SET FORTH IN YOUR TESTIMONY ABOVE ADDRESS THE POTENTIAL ANTI-CIRCUMVENTION TARIFF?

A. No. If an anti-circumvention tariff is imposed and the June 6 Executive Order reversed, then CEI South could terminate the project or refile with Commission.

IX. THE PIKE COUNTY SOLAR PROJECT IS IN THE PUBLIC INTEREST

Q. WHAT ARE THE BENEFITS OF THE LOCATION OF THE PIKE COUNTY SOLAR PROJECT?

A. Being located on CEI South's transmission system provides reliability and economic benefits to customers and the communities CEI South serves. From a reliability perspective, being located on-system reduces the probability of economic and physical

transmission congestion. Economic congestion refers to the price separation between what the generating facility receives and the locational marginal price the customer pays. Also, being located on-system means energy produced from the plant does not have to traverse other Transmission Owners' systems which reduces the probability of being curtailed due to various MISO-wide system conditions, referred to as physical congestion or curtailment. The location of the project also ensures reactive power and voltage support, and that output counts towards the MISO Local Clearing Requirement that mandates a certain percentage of generation resources be physically located in Local Resource Zone 6 (Indiana and northwestern Kentucky).

The project location also is favorable from a solar resource perspective. Southwest Indiana, on average, receives the highest amount of solar irradiance in the State. Further, the proximity to CEI South's existing generation assets enhances the Company's ability to efficiently operate and maintain this solar project utilizing the existing workforce and taking advantage of knowledge of the local area. Finally, Pike County is "unzoned" and therefore not requiring a special use permit for the Project to be built. Moreover, the Pike County Commissioners have approved an Economic Development Agreement related to the project, a Road Use Agreement, and Decommissioning Agreement. Those were the only County approvals required for the project.

Q. ARE THERE OTHER BENEFITS OF ENTERING INTO A BTA FOR THE PIKE COUNTY SOLAR PROJECT?

A. Yes. The Pike County Solar Project is ideal for CEI South to own, operate and maintain. The BTA allows the Company to receive certain benefits that a PPA does not, including realization of the ITC. As further discussed by Petitioner's Witness Vallejo, CEI South's parent company has tax capacity that allows Petitioner to directly realize the ITC without the added cost of a Tax Equity Partner and to pass the savings to customers. A BTA also ensures the land rights and options, zoning permits, and Generator Interconnection are retained by CEI South. Those are among the most valuable and hardest to obtain attributes of a renewable project. As a load-serving entity and provider of last resort to energy customers located within CEI South's assigned service area, it is important to have a long-standing resource with a known cost of energy that can provide economies of scale via reuse and re-utilization of land rights, interconnection rights, and infrastructure.

Finally, a BTA provides the advantages of direct utility ownership that can be combined with PPAs in a diversified generation portfolio to provide multiple off-ramps and optimize flexibility and certainty for our customers. To reduce the risk of the renewable generating portfolio and overall Generation Transition Plan, CEI South is pursuing a diverse and balanced mix of contract structures (BTA/PPA), term lengths (off-ramps), providers/developers, and physical locations.

Q. DOES WORKING WITH CROSSTRACK PRESENT ANY UNIQUE ADVANTAGES?

A. Yes. Crosstrack is a wholly-owned subsidiary of Invenergy Solar Development North America LLC ("ISDNA"), which in turn is a wholly-owned subsidiary of Invenergy Renewables. Crosstrack, ISDNA, and Invenergy Renewables are affiliates of Invenergy LLC ("Invenergy"), which specializes in the development of large-scale renewable and other clean energy generation and storage facilities worldwide and is one of the most experienced renewable developers in the world having twenty years in the business. Invenergy has developed 188 projects worldwide totaling more than 29,500 megawatts ("MW"), including 7,885 MW of solar projects.

Q. IS INVESTMENT IN THE PIKE COUNTY SOLAR PROJECT PRUDENT AND IN THE PUBLIC INTEREST?

A. Yes. Commission approval of the Pike County Solar Project and associated relief sought herein is in the public interest, will enhance or maintain the reliability and efficiency of service provided by Petitioner, and is otherwise consistent with Ind. Code § 8-1-8.8-11. Investment in solar energy resources is reasonable and appropriate; and will benefit Indiana and CEI South's customers. The Pike County Solar Project will diversify the Company's generation portfolio, not only in relation to resource mix and life expectancy of the asset, but in relation to investment type. The Project also is consistent with the CEI South's Generation Transition Plan; and serves to optimize reliability, economic benefits, and certainty of cost and performance. The Pike County Solar Project also provides advantages to CEI South's customers by ensuring long-term, fixed, low-cost renewable energy, and its communities in provision of jobs. Further, its size offers value in economy of scale and performance certainty, given it is in the portion of Indiana having the richest solar resource coupled with its interconnection to the Company's own transmission system thereby enhancing the asset's reliability and reducing potential for transmission congestion, both economic and physical.

X. THE LEVELIZED RATE FOR THE PIKE COUNTY SOLAR PROJECT

Q. WERE YOU INVOLVED IN THE LEVELIZED RATE BEING PROPOSED IN THIS PROCEEDING?

A. Yes. I was involved in determining the proposed Levelized Rate of $0.07075 per KWh of energy produced by the Pike County Solar Project. The rate is competitive with the rates being offered under PPAs.

Q. WHAT DO YOU MEAN [redacted]?

A. As explained, there is a considerable amount of uncertainty in the industry. Therefore, while Crosstrack [redacted] the parties negotiated [redacted] below the [redacted] as further discussed by CEI South Witness Benjamin M. Bailey.

Q. HOW DID YOU DETERMINE THE LEVELIZED RATE IS COMPETITIVE WITH THE RFP PPA RATES?

A. At the time the Pike County Solar Project was selected, CEI South compared the LCOE of the project with the top-half scoring PPAs and comparable BTAs from the 2020 Renewable RFP. The average LCOE for the top-half scoring 20- and 25-year PPAs was [redacted] and [redacted] respectively. That average LCOE is taken from the evaluation LCOEs not accounting for the increases that have occurred across the industry due to the reasons discussed above. Assuming a [redacted] increase in all projects due to the reasons discussed above,[2] the average top-half scoring evaluation LCOEs for 20- and 25-year PPAs would be [redacted] and [redacted] respectively. I would expect these costs to increase as solar projects continue to be cancelled.

Q. ARE THERE OTHER DATA POINTS THAT YOU HAVE USED TO EVALUATE THE COMPETITIVENESS OF THE LEVELIZED RATE?

A. Yes. Indiana Michigan Power Company included the following chart in its Integrated Resource Plan Application filed in Michigan summarizing the levelized cost of the supply-side resources that it anticipated to commence construction within three years of an order in that case, on a per-MWh basis:

[2] Wood MacKenzie has estimated a global solar price increase of [redacted].

Figure KDP-9

Resource Type	In-Service End of Year	Capacity MW	Levelized Capacity Factor %	Levelized Cost of Energy (LCOE) $/MWH
Solar	2024	250	22.4%	$75.66
Wind	2024	400	39.6%	$48.04
Solar	2025	250	22.4%	$74.34
Wind	2025	400	39.6%	$49.06
Solar	2026	250	22.4%	$76.76
Solar over 250 MW	2026	250	22.4%	$86.30
Solar+Storage[1]	2026	300	22.2%	$105.89
Combustion Turbine (CT)	2027	1000	17.2%	$116.69

Note: 1) Includes 300 MW solar + 60 MW storage (4 hour duration)

As I mentioned above, the solar prices shown in the foregoing chart are [redacted] with the prices that CEI South is seeing in the market at this time as reflected in the results of our 2022 All-Source RFP.[3]

Q. IN YOUR OPINION, IS THE LEVELIZED RATE REASONABLE?

A. Yes. The proposed Levelized Rate is below the average PPA rate that could be obtained in the market today. In my view, the use of the Levelized Rate presents a great value to customers given the cost escalation that has been experienced.

XI. MISO Energy Market and Resource Adequacy Requirements

Q. PLEASE DESCRIBE THE MISO ENERGY MARKET.

A. In 2005, Indiana electric utilities, with encouragement from the Commission and the Federal Energy Regulatory Commission ("FERC"), transferred operation of their transmission facilities to a Regional Transmission Operator ("RTO") – MISO for Petitioner. The purpose of MISO's energy market is to dispatch the lowest cost generation within the MISO footprint required to maintain system reliability, giving MISO members the lowest cost energy available. As a member of MISO, Petitioner, like all MISO members, projects

[3] Michigan PUC, Case No. U-21189, Direct Testimony of Kelly D. Pearce at 28. Available at https://mi-psc.force.com/sfc/servlet.shepherd/version/download/0688y000002AaPpAAK.

and submits its hourly energy needs and offers 100 percent of available generation for each hour of each day throughout the year into this market at the avoided costs. MISO collects all load projections and monetary energy offers and after ensuring grid reliability is maintained, dispatches the lowest cost generation facilities to meet the projected system needs for each hour of the day.

Q. HOW WILL CEI SOUTH ACCOUNT FOR THE ENERGY FROM PIKE COUNTY SOLAR PROJECT IN THE MISO MARKET?

A. Energy output from the Pike County Solar Project will be offered into the MISO wholesale energy market daily per MISO tariff and Business Practice Manual ("BPM") requirements. This involves offering the expected energy output on a day-ahead basis and settling the actual real-time output against day-ahead awarded volume and market clearing price versus day-ahead awarded price. Additionally, all accredited capacity will be used to satisfy MISO's PRMR and Local Clearing Requirements prescribed by the MISO tariff. The project will provide accredited capacity and energy to meet PRMR in the MISO wholesale market and Local Clearing Requirements.

Q. PLEASE DESCRIBE THE MISO RESOURCE ADEQUACY REQUIREMENTS.

A. MISO's resource adequacy requirements ensure that sufficient resources exist to meet anticipated customer usage during periods of peak demand. MISO's resource adequacy requirements include the PRMR and Local Clearing Requirement ("LCR"). The PRMR is the amount of capacity each load serving entity ("LSE") must have to meet expected peak customer demand for the planning year as well as a "buffer" to account for higher than anticipated customer demand or unplanned electric generator outages. The LCR is the percentage of capacity that must be physically located within a MISO local resource zone to ensure local reliability. Not being able to meet the PRMR or LCR means there would be a higher probability of outages due to an insufficient supply of capacity.

Q. WHAT HAPPENS IF CEI SOUTH DOES NOT HAVE ENOUGH CAPACITY TO MEET THEIR PRMR?

A. If CEI South would not have enough owned capacity or bilateral to meet their PRMR then CEI South would have to participate in the MISO Planning Resource Auction ("PRA") which is an annual capacity auction where CEI South and other utilities can procure capacity to meet MISO's resource adequacy requirements.

Q. HOW DOES THE PRA WORK?

A. MISO will clear resources from within each local resource zone based upon economic merit, until the zone's LCR has been reached. After the zone's LCR has been reached, MISO will continue to clear resources from both within and outside of the local zone based upon economic merit, until the zone's PRMR is reached. The auction clearing price is the price of the most expensive capacity resource that cleared in the auction. In the event that there are insufficient resources to meet the zone's LCR or the zone's PRMR, the auction clearing price will be the Cost of New Entry ("CONE"), which is the cost of a new natural-gas fired combustion turbine facility in the zone

Q. IS IT POSSIBLE TO OVER RELY ON THE PRA FOR CAPACITY?

A. The Indiana House Bill 1520 ("HB 1520") requires each public utility can reasonably acquire not more than 30% of its PRMR from the PRA. In addition, MISO's Minimum Capacity Obligation ("MCO") proposal, submitted to FERC requires utilities to secure at least 50% of their PRMR ahead of each PRA. It is clear both are directing utilities to minimize their reliance on others to meet their PRMR.

Q. WHAT WERE THE RESULTS OF THE MOST RECENT MISO PRA?

A. The April published MISO 2022/2023 PRA Results revealed a capacity shortfall for the MISO North and Central Regions, thus exposing utilities with net short positions to the PRA auction clearing price of CONE for the planning year - $236.66/MW-Day. MISO commented in the 2022 PRA results "The 2020-21 OMS-MISO survey projected a small surplus for planning year 2022-23, which was eroded by an increased load forecast, less capacity entering the auction as result of retirements, and the decreased accredited capacity of new resources."[4]

Q. WHAT DOES THE PRA CLEARING PRICE OF CONE REALLY MEAN?

A. It essentially means those utilities needing to purchase capacity in the PRA paid the CONE price of $236.66/MW-day. For example, 100 MW capacity purchased in the 2022 PRA equates to approximately $8.6 Million – this is substantial to customers and illustrates reliance on others to meet CEI South's PRMR should not be a long-term strategy.

Q. DOES A CAPACITY SHORTFALL PRESENT RISKS TO CUSTOMERS?

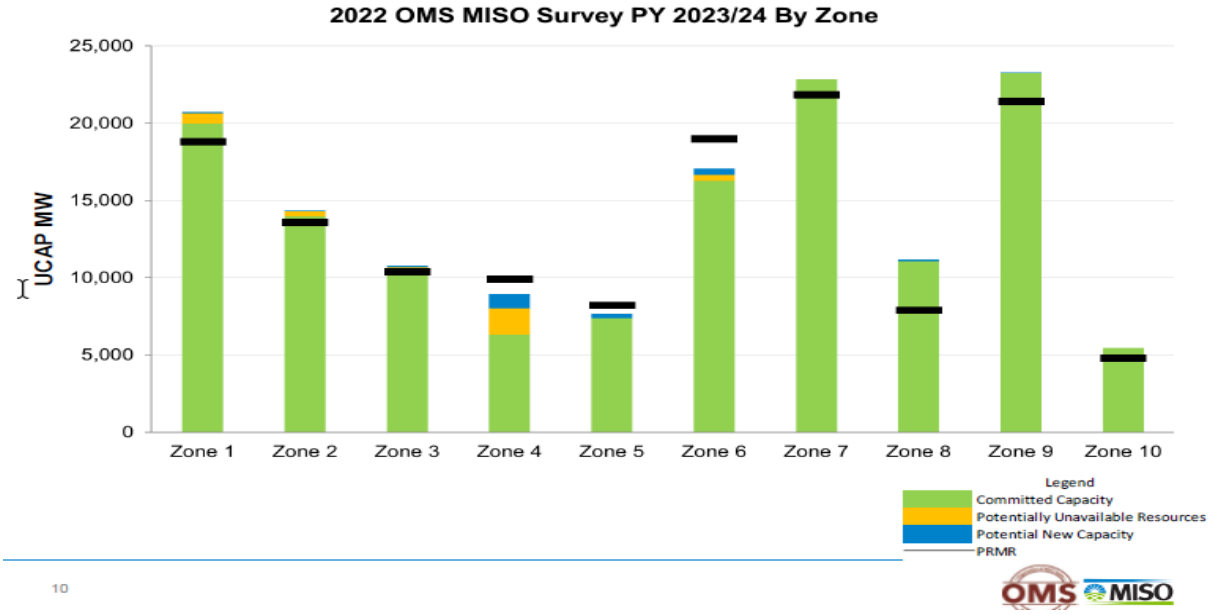
[4] See https://cdn.misoenergy.org/2022%20PRA%20Results624053.pdf

A. Yes, as MISO pointed out in their 2022 PRA results: "The auction results indicate that MISO North/Central Regions have a slightly increased risk of needing to implement temporary controlled load sheds."[5] The potential load shed impact to customers illustrates how imperative it is for each MISO zone, and each utility in each zone to meet its own PRMR.

Q. IS THERE A RISK OF CAPACITY SHORTFALLS IN FUTURE YEARS?

A. Yes. MISO released the 2022 OMS-MISO Survey Results on June 10, 2022. MISO pointed out in the survey that the MISO footprint is "projected to have a capacity deficit of 2.6 GW below the 2023 PRMR". Similar to the 2022 PRA results, these deficits are restricted to the North/Central Regions. Capacity deficits are projected to widen in subsequent years primarily driven by demand growth and the continued retirements of coal fired resources.

Capacity shortages shown in 2022 PRA are reflected in the 2023 survey zonal outlook



Q. HOW DOES THE PIKE COUNTY SOLAR PROJECT'S 130 MWAC SUSTAIN CEI SOUTH'S PRMR POSITION?

A. CEI South's forecasted capacity position for 5-years starting with the 2025/2026 MISO capacity planning year is represented in the table below. As you can see, with the Pike

[5] *Id.*

County Solar Project included, CEI South's current capacity position is [redacted] to the PRMR in the first three planning years and then going [redacted] in the last two years [redacted].

	Projected 2025/2026	Projected 2026/2027	Projected 2027/2028	Projected 2028/2029	Projected 2029/2030
Surplus above/below PRMR (MWs)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Q. ARE THERE MISO AND OTHER RELATED BENEFITS TO CEI SOUTH'S CUSTOMERS BY HAVING THE PIKE COUNTY SOLAR PROJECT INTERCONNECTED WITH CEI SOUTH'S TRANSMISSION SYSTEM?

A. Yes. CEI South's Transmission Planning group has done initial System Impact Study ("SIS") analysis and found no material adverse impact to the CEI South transmission system. By having the Projects physically located on CEI South's transmission system and thus located near the load the projects are intended to serve, customers will have reduced risk of physical curtailment and economic price separation of the units.

Congestion impacts are an important aspect of a project's location and overall value and simplistically speaking, the nearer the generator is to the load it serves, the less variables exist to cause the generator to be constrained and economic detriment to the customer via economic congestion. If the facility is located far away from the load it serves, it is likely to experience different availability and peak periods compared to the load it serves. Additionally, the further away the generator is from the load node it serves, the greater likelihood there is for price separation due to these differing availability and peak periods, and the fact that there are neighboring transmission and load issues could cause the price the generator is receiving to be divergent from the price the customer is paying at the load node. In a perfectly non-constrained transmission system, this would not be the case, but in a 15-state Independent System Operator footprint, it is nearly impossible nor financially feasible to build a system that is immune to system constraints. Therefore, the location of these facilities reduces the probability of impacts due to these constraints.

Q. PLEASE DESCRIBE PETITIONER'S EXHIBIT NO. 2, ATTACHMENT FSB-5.

A. Petitioner's Exhibit No. 2, **Attachment FSB-5** is a chart setting forth additional details regarding the Pike County Solar Project's interconnection to the MISO system and impact

on CEI South's PRMR which the Commission indicated should be provided in CPCN cases pursuant to GAO 2022-1.

XII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

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

F. Shane Bradford
Director, Power Supply Services

7/29/22
Date

Attachment EMC-1

CNP Renewable BTA Escalation Analysis

July 28, 2022

Power Advocate

Executive Summary

Given recent market changes, [redacted] for Crosstrack Solar Project is favorable; [redacted] is within Wood Mackenzie Supply Chain Consulting's (SCC) low to median forecasted range

- BTA for Crosstrack Solar Project [redacted] 2020Q4
- [redacted]
  - [redacted]
  - [redacted]
- [redacted]
- Prior to performing cost modeling, SCC conducted a review of the BTA documents, [redacted]
- [redacted]
- [redacted]
  - [redacted]

Background

- **Purpose of the Report**: to provide insight [redacted] to determine the reasonableness of the BTA for Crosstrack Solar Project

- **Background**: Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy (CNP) is working to secure a BTA for 130MWac Crosstrack Solar Project

- **Timeline**: [redacted]

- [redacted]

- **Additional Comments**:
  - Crosstrack's scope of work includes construction of the solar farm as well as rebuilding of the substation
  - CNP has limited visibility into the BTA pricing components, which is typical for these agreements
  - Interconnect costs [redacted] in addition to substation rebuild scope, [redacted]
  - Construction is scheduled to take place between 6/30/2023 and 6/30/2025

Key Assumptions and Methodology

The limited pricing visibility required SCC to make several assumptions have been made in order to complete this analysis

Assumptions:

- Since this substation is a rebuild and not new construction, [redacted].
- Substation is located at/near the solar project site

[redacted]

[redacted]

General Solar Project Historical Escalation and Forecast

The construction costs to build solar projects increased dramatically in 2021 and SCC projects that prices have continued to rise through the first half of 2022 and are expected to begin leveling off

Solar Construction Historical Price Escalation and Forecast

Crosstrack Project Cost Drivers

[redacted]

[redacted]

Solar Project Cost Breakdown: High Level and Solar Module

Understanding commodities impacting the price of solar modules is crucial [redacted]

[redacted]

Solar Project Cost Breakdown: Substation

Substation cost [redacted]*. Equipment and construction labor* [redacted]

[redacted]

Crosstrack BTA Price Escalation: Historical Values

[redacted]

Solar Construction Historical Price Escalation and Forecast

[redacted]

[redacted]

Crosstrack BTA Price Escalation: Forecast

Based on Woodmac's solar cost model, BTA price for Crosstrack Solar Project remains within low to median forecast through 2025Q1

Solar Construction Historical Price Escalation and Forecast vs. BTA Price
(September 2020 to 2025Q1)

Attachment MAR-3

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY dba CENTERPOINT ENERGY INDIANA SOUTH

130 MW Owned Pike County Solar 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

Line	Description	Estimated Bill Impact
1	Gross Capacity - MWac	130
[redacted]		
[redacted]		
4	Estimated Levelized Rate per kWh Produced	$ 0.070750
[redacted]		
6	2025 Annual Budgeted Residential Sales - kWh	1,366,683,597
7	CECA Residential Allocation Percentage (Modified 4CP) [2]	40.6160%
[redacted]		
[redacted]		
10	Total Monthly Bill Impact per 1,000 kWh net of RECs @$8 per MWh (Line 8 + Line 9)	$ 5.50

[1] IURT Gross Up not included

[2] Pursuant to Cause No. 43354-MCRA 21 S1 Settlement Agreement.