COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A GENERAL ADJUSTMENT OF ITS RATES FOR ELECTRIC SERVICE; (2) APPROVAL OF TARIFFS AND RIDERS; (3) APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS; AND (4) ALL OTHER REQUIRED APPROVALS AND RELIEF	)))))))	CASE NO. 2025-00257

KENTUCKY SOLAR INDUSTRIES ASSOCIATION, INC.
INTERVENOR TESTIMONY

Comes now the Kentucky Solar Industries Association, Inc. (KYSEIA), by and through counsel, and files its verified Intervenor Testimony of Justin R. Barnes into the record for the instant case.

WHEREFORE, KYSEIA respectfully submits its Intervenor Testimony.

Respectfully submitted,

/s/ David E. Spenard

Randal A. Strobo
David E. Spenard
STROBO BARKLEY PLLC
730 West Main Street, Suite 202
Louisville, Kentucky 40202
Phone: 502-290-9751
Facsimile: 502-378-5395
Email: rstrobo@strobobarkley.com
Email: dspenard@strobobarkley.com

Counsel for KYSEIA

NOTICE AND CERTIFICATION FOR FILING

Undersigned counsel provides notices that the electronic version of the paper has been submitted to the Commission by uploading it using the Commission's E-Filing System on this 17th day of November 2025. Pursuant to the Commission's July 22, 2021 Order in Case No. 2020-00085 (Electronic Emergency Docket Related to the Novel Coronavirus COVID-19), the paper, in paper medium, is not required to be filed.

/s/ David E. Spenard

NOTICE CONCERNING SERVICE

The Commission has not yet excused any party from electronic filing procedures for this case.

/s/ David E. Spenard

DIRECT TESTIMONY OF

JUSTIN R. BARNES

ON BEHALF OF

KENTUCKY SOLAR ENERGY INDUSTRIES ASSOCIATION, INC.

DOCKET NO. 2025-00257

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR FULL NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Justin R. Barnes. My business address is 1155 Kildaire Farm Rd., Suite 203, Cary, North Carolina, 27511. My current position is President of EQ Research LLC.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY?

A. I am submitting testimony on behalf of the Kentucky Solar Energy Industries Association, Inc. ("KYSEIA").

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. Yes. I have previously submitted testimony before the Kentucky Public Service Commission in Case Nos. 2020-00349 and 2020-00350 on the design of the Louisville Gas and Electric and Kentucky Utilities tariffs for purchases of energy and capacity from PURPA qualifying facilities ("QFs"). I also submitted testimony in Case No. 2020-00174,

where I addressed the Kentucky Power Company's ("Kentucky Power" or "the Company") proposed NMS II tariff certain aspects of its QF tariffs.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND OCCUPATIONAL BACKGROUND.

A. I obtained a Bachelor of Science in Geography from the University of Oklahoma in Norman in 2003 and a Master of Science in Environmental Policy from Michigan Technological University in 2006. I was employed at the North Carolina Solar Center at North Carolina State University for more than five years as a Policy Analyst and Senior Policy Analyst.[1] During that period I worked on the Database of State Incentives for Renewables and Efficiency ("DSIRE") project, and several other projects related to state renewable energy and energy efficiency policy. I joined EQ Research in 2013 as a Senior Analyst, became the Director of Research in 2015, and President in 2023. In my current position, I oversee, coordinate, and contribute to EQ Research's various state clean energy policy subscription products and oversee and perform customized research and analysis to fulfill client requests. My CV is attached as Exhibit JRB-1.

Q. PLEASE SUMMARIZE YOUR RELEVANT EXPERIENCE AS IT RELATES TO THIS PROCEEDING.

A. My professional career has been spent researching and analyzing numerous aspects of federal and state energy policy, spanning more than a decade. Throughout that time, I have reviewed and evaluated trends in energy regulatory policy as well as other aspects of ratemaking relevant to distributed generation ("DG") and distributed energy resources ("DERs") such as cost of service, rate design, and the value of DERs. I use the term DERs

[1] The North Carolina Solar Center is now known as the North Carolina Clean Energy Technology Center.

generally to encompass customer-sited generation resources like rooftop solar as well as community solar and customer-sited battery storage.

Outside of Kentucky, I have submitted testimony before utility regulatory commissions in Colorado, Georgia, Hawaii, Indiana, Michigan, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oklahoma, South Carolina, Texas, Utah, Virginia, West Virginia, and Wisconsin, as well as to the City Council of New Orleans, on various issues related to DER policy, net metering, rate design, and cost of service. These proceedings have involved a mix of general rate cases and other types of contested cases. Exhibit JRB-1 contains summaries of the subject matter I have addressed in each of these proceedings.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is twofold. First, my testimony addresses the Company's proposed consolidation of its respective COGEN/SPP I and COGEN/SPP II tariffs that apply to PURPA QFs and the addition of language governing how QFs may establish a legally enforceable obligation ("LEO") for power sales to the Company. I recommend several changes to the Company's proposed LEO framework, including the applicability of the LEO to as-available energy sales, the LEO establishment process, and several of the specific criteria that the Company proposes to employ. My recommendations are intended to reflect the core purpose of the LEO concept, provide transparency and standardization that the Company's proposal lacks, and eliminate elements that are unnecessary and would be unduly burdensome, in particular for small QFs.

Second, I provide a review and analysis of the COGEN/SPP tariff within the context of an eventual sunset of the Company's net metering tariff, after which the COGEN/SPP

tariff would be the only tariff option for small self-generation customers that would have previously qualified for net metering. This aspect of my testimony incorporates my concerns regarding problematic aspects of the new LEO language as well as additional concerns associated with existing elements of the present QF tariffs that would be retained in a consolidated COGEN/SPP tariff.

Q. PLEASE SUMMARIZE YOUR THOUGHTS ON THE FUTURE SUNSET OF THE COMPANY'S NET METERING TARIFFS AS IT RELATES TO THE PROPOSED COGEN/SPP TARIFF.

A. The eventual closure of net metering to new customer enrollments will result in a change in export compensation for future small self-generation customers, presumably a considerable reduction relative to the NMS II tariff. However, that transition need not, and should not, be accompanied by further obstacles for such projects. While the compensation rate for exports may change, there is no reason why all other aspects of the tariff application process and other terms and conditions of self-generation service should not remain the same. Unfortunately, the Company's proposed COGEN/SPP tariff, and the proposed LEO regime in particular, would erect further hurdles that serve no purpose other than to make it more difficult for customers to pursue self-generation. The present case is an opportunity to address those problems and in doing so ensure that the eventual transition is as smooth as it can be.

Q. PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.

A. Section II of my testimony presents my review of the Company's proposed COGEN/SPP tariff in the following subsections:

- Section A provides background information on the present COGEN/SPP I and COGEN SPP II tariffs and the Company's consolidated COGEN/SPP tariff proposal.
- Section B discusses the 45 kW minimum system size threshold that the Company initially proposed for the COGEN/SPP tariff.
- Section C addresses the Company's proposal to condition all power contracts, including sales of as-available energy, on the satisfaction of its proposed LEO establishment framework, and explains why this is unreasonable and illogical.
- Section D provides an evaluation of specific elements of the Company's proposed LEO framework and recommends modifications to render it more transparent and eliminate unnecessary and burdensome elements.
- Section E addresses the reasonableness of a requirement that customers with QFs of 10 kW or larger take service under a demand rate and the accompanying calculation of monthly billing demand under that provision.
- Section F addresses the reasonableness of incremental metering charges and recommends as they pertain to self-generation QF customers.
- Section G recommends a small clarifying refinement to the Company's proposed tariff language governing contract duration.

The discussion of aspects that relate more specifically to a transition from net metering to the COGEN/SPP tariff and small QFs more generally is integrated throughout these sections because it cuts across multiple aspects of the proposed COGEN/SPP tariff.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. My recommendations by topic area are listed below in the order they appear in my testimony. All of these recommendations pertain the Company's proposed consolidated COGEN/SPP tariff.

1.) 45 kW Minimum Size Threshold: The 45 kW minimum system size threshold in the Company's initially filed tariff, which the Company has indicated is an error but which it has not corrected, should be eliminated.

2.) Applicability of the LEO Criteria: Any LEO framework that is adopted, with or without modifications relative to the Company's proposal, should not be applied to customers whose power sale offers are limited to as-available energy, such that the Company is obligated to enter a power purchase contract for as-available energy that is not conditioned on the QF establishing a LEO.

3.) Specific Elements of the LEO Framework and Criteria: The Commission should adopt a LEO framework with the following modifications relative to the Company's proposed requirements.

- The process for establishing a LEO should be modified to place control of such establishment within control of the QF, provided the QF submits accurate information in a standard Notice of Commitment form.
- The standard Notice of Commitment form should use the small QF (1 MW or less) and large QF (larger than 1 MW) forms employed by Duke Energy for its North Carolina operations as templates. These forms are attached to my testimony as Exhibits JRB-2 and JRB-3.

- The standard Notice of Commitment form should be accompanied by guidance listing specific documentation that satisfies criteria associated with the QF having undertaken meaningful efforts to: (i) obtain site control, and (ii) secure requisite permits. The use of such specified documentation should confer an automatic determination that the applicable criterion has been satisfied, while non-standard documentation may also be used subject to a case-by-case review by the Company.
- The Company's proposed LEO criterion requiring the submission of a FERC Form No. 556 to certify eligibility as a QF should be eliminated for QFs of 1 MW or less, which the FERC has exempted from the Form No. 556 filing requirement.
- The Company's proposed LEO criterion requiring the submission of a deposit for potential interconnection studies should be eliminated in its entirety.

4.) Demand Charge Requirement for QFs of 10 kW or Larger: The requirement that COGEN/SPP customers with system sizes larger than 10 kW pay a QF-specific demand charge should be eliminated.

5.) Metering Charges: The Commission should direct the Company to: (i) utilize AMI meters for any meter replacements necessary for service under the COGEN/SPP tariff for new enrollments after it begins AMI deployment, and (ii) eliminate additional metering charges on COGEN/SPP self-generation customers that take service through an AMI meter.

6.) Contract Duration Language: The Commission should direct the Company to revise the language in the COGEN/SPP tariff to clarify that the contract duration may range from five years to twenty years as elected by the QF.

Q. PLEASE IDENTIFY ANY EXHIBITS YOU ARE SPONSORING.

A. I am sponsoring the following Exhibits:

- Exhibit JRB-1 - CV of Justin R. Barnes
- Exhibit JRB-2 – Duke Energy North Carolina's Small QF Notice of Commitment
- Exhibit JRB-3 – Duke Energy North Carolina's Large QF Notice of Commitment

II. QUALIFYING FACILITY TARIFFS

A. Background & Summary of the Company's Proposal

Q. PLEASE BRIEFLY SUMMARIZE THE COMPANY'S PROPOSALS REGARDING TARIFFS COGEN/SPP I AND COGEN/SPP II.

A. The Company proposed to consolidate tariffs COGEN/SPP I and COGEN/SPP II into a single tariff, COGEN/SPP.[2] The Company also proposed adding language to the consolidated tariff COGEN/SPP to establish a maximum contract term of 20 years.[3] Additionally, and most significantly, the Company proposed new requirements in the consolidated tariff that a QF would have to meet to establish the Legally Enforceable Obligation ("LEO") under the Public Utility Regulatory Policies Act ("PURPA").[4]

Q. PLEASE BRIEFLY DESCRIBE THE CURRENT TARIFFS COGEN/SPP I AND COGEN/SPP II.

A. The current Tariff COGEN/SPP I applies to QFs with a "net power production capacity of 100 kW or less of capacity."[5] The current Tariff COGEN/SPP II applies to cogeneration QFs with a net power production capacity of over 100 kW and less than 20,000 kW and to

[2] Cobern Direct at 24:3-4.
[3] Cobern Direct at 24:10-11.
[4] Cobern Direct at 24:12-15.
[5] Application, Section II, Exhibit E at 140.

small power production QFs with a net power production capacity of over 100 kW and less than 5,000 kW.[6] Both of the current tariffs describe the following three options:

- Option 1: QF uses its own output to meet its own power needs, purchases power from the Company to meet any remaining net load, and does not sell any surplus output to the Company;
- Option 2: QF uses its output to meet its own power needs and sells surplus output (i.e., output in excess of the QF's own power needs) energy and capacity to the Company, and when needed the QF purchases power from the Company to meet its net load (i.e., QF power needs in excess of QF output);
- Option 3: A buy-all/sell-all arrangement under which the entire output of the QF is sold as energy and capacity to the Company and the QF purchases power from the utility to meet all of its power needs.[7]

These three options also relate to the metering arrangements and charges. There is no additional metering charge under Option 1, while for Options 2 or 3 there is an additional monthly metering charge that varies based on a single- or polyphase interconnection and whether the meter records standard or time-of-day ("TOD") measurements.[8] The monthly metering charges are the same under both of the current tariffs. Further elements common to both tariffs include: [9]

- A contract term of at least five (5) years;
- An option for a QF to "request that avoided cost rates be set on an "as-available" basis or when a legally enforceable obligation is established";

[6] Application, Section II, Exhibit E at 143.
[7] Application, Section II, Exhibit E at 143 and Application, Section II, Exhibit E at 140.
[8] *Ibid*.
[9] Application, Section II, Exhibit E at 145 and Application, Section II, Exhibit E at 142.

- A "clawback" provision that applies to capacity payments if the QF reduces its output or discontinues operations for a period of more than six (6) months and allows the Company to recover from the QF the difference between actual capacity payments and the capacity payments that would have been made according to the QF's contract capacity level.
- An identical calculation of the energy credits and capacity credits, as applicable, that are due to a QF.

Q. PLEASE BRIEFLY DESCRIBE PURPA AND WHAT IT REQUIRES.

A. First, I should clarify that I am not an attorney and am unable to offer legal opinions. Having said that, I am familiar with PURPA and its associated federal regulations, and the various state-level practices for implementing PURPA requirements. Accordingly, my responses reflect a plain reading of the relevant regulations (both federal and state) and are informed by my experience reviewing policies present in other jurisdictions.

PURPA's enactment in November 1978 marked a milestone in U.S. energy policy that I view as the start of the competitive era in the electric utility industry. PURPA was possibly the most significant development in electric utility regulation since the 1935 enactment of the Federal Power Act and the Public Utility Holding Company Act as it was the first federal law requiring electric utilities to purchase power from certain types of non-utility generators called QFs. The then-recently created Federal Energy Regulatory Commission ("FERC") promulgated the regulations implementing PURPA pertinent to this case in 18 CFR Part 292 in early 1980.[10] Those regulations were most recently updated in 2020 by FERC Order No. 872.[11]

[10] 45 FR 12214.
[11] 172 FERC ¶ 61,041.

As currently implemented, PURPA defines electric utility obligations to QFs, establishes standards for both the rates for utility purchases from QFs and the rates for utility sales to QFs, among other aspects of transactions between utilities and QFs. Under 18 CFR § 292.303, among other obligations, utilities have an obligation to purchase energy and capacity made available from QFs, an obligation to sell energy and capacity requested by the QF, an obligation to interconnect with QFs, and an obligation to operate in parallel with a QF.

18 CFR § 292.304 establishes standards for utility purchases from QFs, including various approaches for determining the "avoided cost", or the price paid by a utility purchasing energy or capacity from a QF, defining minimum standard rates for utility purchases from QFs with a design capacity of 100 kW or less, and delineating between utility purchases made on an as-available basis and purchases made pursuant to a LEO. 18 CFR § 292.305 sets forth requirements governing the sales by a utility to a QF. Rates for utility purchases and sales are both required to be just and reasonable and in the public interest, and also non-discriminatory against QFs.

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSAL TO CONSOLIDATE ITS COGEN/SPP I AND II TARIFFS.

A. The Company proposed to consolidate both of its current COGEN/SPP I and II tariffs into a single COGEN/SPP tariff "to improve clarity and consistency in its offerings" even though "[t]he existing language in both tariffs is largely identical" and, as I previously discussed, the terms and prices and charges are also generally consistent between the two tariffs.[12] The Company's proposed consolidated QF tariff includes two prominent changes:

[12] Cobern Direct at 24:3-7.

(i) limiting eligibility for the consolidated tariff to QFs with net power production capacity of 45 kW or more; and (ii) adding a variety of terms and conditions associated with establishing a legally enforceable obligation ("LEO") under which the Company is obligated to provide compensation to QFs.

Q. PLEASE SUMMARIZE YOUR CONCERNS WITH THE COMPANY'S CONSOLIDATION SCHEME FOR THE COGEN/SPP I AND II TARIFFS.

A. There are several concerning aspects. First, the proposed 45 kW minimum size threshold violates PURPA and would create a tariff eligibility gap under which some QFs would not have an available option to receive compensation for surplus generation (i.e., generation in excess of on-site load) delivered to the Company. As I further describe below, the Company has indicated that the 45 kW minimum size threshold was an error. However, the Company's error, and its implications, presents a timely opportunity for consideration of a scenario where the net metering enrollment is closed to new customers and the COGEN/SPP tariff becomes the only available surplus compensation tariff for small DG customers (at least under the present tariff regime).

Second, the Company's proposed LEO conditions are problematic in several respects, as follows:

- The Company proposes to employ the LEO conditions to "as-available" or "as delivered" energy purchases that do not involve avoided capacity compensation or fixed future energy rates, which is non-sensical in relation to what a LEO is intended to represent.
- The LEO conditions would erect absurd and unnecessary barriers (e.g., residential systems in a post-net metering scenario) if applied to small customer-sited generation.

- Several of the LEO conditions are onerous, unnecessary, or vaguely defined.

B. The Proposed 45 kW Minimum Threshold is Unreasonable

Q. PLEASE ELABORATE ON THE 45 KW ELIGIBILITY LIMIT IN THE PROPOSED CONSOLIDATED TARIFF?

A. The Company's proposed consolidated Tariff COGEN/SPP "is available to customers with cogeneration and/or small power production (COGEN/SPP) facilities … which have a net power production capacity of over 45 kW."[13] The existing tariffs apply to either QFs with net power production capacity of 100 kW or less for Tariff COGEN/SPP I or QFs with net power production capacity more than 100 kW for Tariff COGEN/SPP II.

The proposal to limit eligibility under the proposed tariff COGEN/SPP to QFs with a net power production capacity of more than 45 kW clearly prevents QFs with less than 45 kW of net power production capacity from selling power to the company. PURPA provides no minimum size for QF eligibility. Rather, PURPA regulations address facility size in the following ways:

- A maximum QF size of eighty 80 MW is provided in 18 CFR § 292.204(a);
- Under 18 CFR § 292.309(e) there is a rebuttable presumption that small power production facilities (i.e., renewable energy facilities such as those power by wind or solar) greater than five (5) MW have nondiscriminatory access to certain regional wholesale markets (e.g., the PJM) or in other words that small power production facilities with five MW or less of capacity do not have nondiscriminatory access to the PJM market and PJM-member electric utilities are not relieved of their purchase obligation under PURPA; and

[13] Application, Section II, Exhibit E at 143.

- QFs with a design capacity of 100 kW or less are required to have access to standard rates pursuant to 18 CFR § 292.304(c)(1).

There is no basis under PURPA for restricting QF eligibility for PURPA tariff(s) to only QFs with more than 45 kW of capacity. The Company has acknowledged that "[t]he 45 kW lower limit was included in error".[14] They further stated that "[t]he 45 kW lower limit was originally included due to the cap on the size of a net metering facility dictated by KRS 278.465(2)" and that QF with capacity of 45 kW or less may take service under the new proposed tariff and that a correction will be made, if approved, when the Company submits a compliance tariff.[15]

Q. WHAT ARE THE IMPLICATIONS OF THE COMPANY'S ERROR, IF IT WERE ALLOWED TO PERSIST?

A. For one, it would be inconsistent with the clear requirements of PURPA. Regardless of whether a customer is also eligible for service under net metering as defined in Kentucky law, any facility that qualifies as a QF should also have access to a PURPA-compliant tariff at their election. Furthermore, there are circumstances where a facility smaller than 45 kW would not qualify for net metering, in which case there would not be any available customer option for surplus generation compensation. For instance, a residential customer might wish to install a system that is oversized relative their on-site load, or the total capacity of net metering systems could exceed the aggregate net metering cap, rendering net metering unavailable to new installations. Accordingly, the parameters of the proposed COGEN/SPP tariff merit consideration not only from the standpoint of facilities designed for the

[14] Company response to KYSEIA 1_1(e).
[15] Company response to KSPC 2_3.

commercial sale of power, but also from the standpoint of small facilities designed primarily to offset on-site consumption of residential and small commercial loads.

C. The LEO Condition for As-Available Energy Is Unreasonable and Illogical

Q. PLEASE EXPLAIN THE CONCEPT OF A LEO UNDER PURPA.

A. The requirements for establishing a LEO under PURPA are found in 18 CFR § 292.304(d). Under these regulations a QF establishes the LEO by "demonstrat[ing] commercial viability and financial commitment to construct its facility pursuant to criteria determined by the state regulatory authority" and "[s]uch criteria must be objective and reasonable."[16] Once established by the QF, "a LEO gives QFs the enforceable right to require utilities to purchase the QFs' power at avoided cost rates."[17]

A LEO conveys important rights to the QF because it ensures that QFs may "enter into contractual commitments based, by necessity, on estimates of future avoided costs".[18] Since its inception, PURPA has recognized the importance of providing certainty about the prices a QF will receive for the sale of its energy and capacity to an electric utility, and the LEO provides this certainty by requiring the utility to purchase QF output over a specified term at prices established at the time the LEO is established. That is, the central feature of a LEO is that it establishes a temporal benchmark for estimates of future avoided costs, including fixed capacity rates, should a QF elect this purchase option.

[16] 18 CFR § 292.304(d)(3).
[17] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ¶33 at 24.
[18] FERC Order No. 69, 45 FR 12214 at 12224.

Q. PLEASE FURTHER DESCRIBE THE OPTIONS AVAILABLE TO A QF FOR SELLING POWER TO A UTILITY.

A. There are two approaches for a QF to sell its output to a utility under 18 CFR § 292.304(d) and two types of pricing available to a QF, as shown in Table 1 below. Under 18 CFR § 292.304(d)(1) each QF has the option to either (i) provide energy as the QF determines the energy to be available, or (ii) "provide energy or capacity pursuant to a legally enforceable obligation for the delivery of energy or capacity over a specified term".

Table 1: QF Options and Utility Obligation to Purchase

Approach	QF Provides	Term	Purchase Price	Reference
Energy made available	Energy	Continuous, QF determined availability	Avoided energy cost calculated at the time of delivery	18 CFR § 292.304(d)(1)(i)
Pursuant to LEO	Energy and/or Capacity	Specified term	Avoided energy/capacity cost calculated at the time of delivery	18 CFR § 292.304(d)(1)(ii)(A)
			Avoided energy/capacity cost calculated at the time the LEO is established	18 CFR § 292.304(d)(1)(ii)(B)

After a QF elects to sell its energy and capacity to the utility over a specified term pursuant to the LEO, the QF may choose to receive a rate for purchases, or purchase price, based on either (A) avoided costs calculated at the time of delivery, or (B) avoided costs calculated at the time the LEO is established. In summary, the option under 18 CFR § 292.304(d)(1)(i) allows a QF to sell energy the QF determines to be available at the avoided energy cost calculated at the time of delivery, which differs from the option under 18 CFR § 292.304(d)(1)(ii) because QF sales made pursuant to a LEO are (1) energy and/or capacity, (2) over a specified term, and (3) priced at either the avoided cost at the time of delivery or a fixed, or known, avoided cost calculated at the time the LEO is established.

Q. PLEASE ELABORATE ON THE DIFFERENCE BETWEEN AVOIDED COSTS CALCULATED AT THE TIME OF DELIVERY AND AVOIDED COSTS CALCULATED AT THE TIME THE LEO IS ESTABLISHED?

A. Avoided costs calculated at the time of delivery refer to avoided costs that change periodically and are sometimes called the "as-available rate", while avoided costs calculated at the time the LEO is established, or incurred, refer to avoided costs that are fixed over a specified term and are sometimes called the "fixed long-term rate".

In 1980, when PURPA regulations were first adopted by the FERC it was impractical, if not outright impossible, to calculate avoided costs on a minute-by-minute basis at the actual minute of delivery. As a substitute for high-frequency real-time calculations, avoided costs "calculated at the time of delivery" were, in practice, calculated on the two-year cycle required under PURPA for states to update avoided cost rates and are often represented in QF tariffs as a two-year price. A QF that elects to receive avoided costs calculated at the time of delivery would sell its output at a price that changes every two years.

In contrast, avoided costs "calculated at the time the obligation is incurred" (i.e., the time the QF establishes the LEO) are fixed over a specified future term. This option provides price certainty to the QF, reduces QF risk, supports the QF's ability to obtain financing and potentially financing at a lower cost than would otherwise be available, safeguards against retroactive ratemaking in the event of changed circumstances, and limits a utility's ability to leverage its asymmetrical knowledge advantage to the detriment of a QF.

At first glance, some of the options in Table 1 may appear to be nearly identical, particularly those options under which a QF sells at the as-available price, or the avoided cost calculated at the time of delivery, but there are important distinctions. A QF that chooses to sell its output under 18 CFR § 292.304(d)(1)(i) has not agreed to sell its output over a specified term and retains flexibility in its operations by foregoing eligibility to sell at fixed long-term prices. A QF selling pursuant to a LEO agrees to sell its output over a specified term but may still elect to sell at avoided costs calculated at the time of delivery, or as-available prices, or the QF may choose to sell at fixed long-term prices based on avoided costs calculated at the time the LEO is established.

The difference between these options under a LEO is that a QF selling at avoided costs calculated at the time of delivery has exposure to changing market conditions, meaning that if fuel prices and/or capacity prices increase at a faster rate than expected, then the QF will receive a higher price in future years than it would have if its output was sold at the fixed long-term price under 18 CFR § 292.304(d)(1)(ii)(B), but that exposure to changing market conditions may also result in the QF receiving lower prices in future years than it would have if its output was sold at the fixed long-term price. On the other hand, a QF choosing to sell at fixed long-term prices pursuant to the LEO is less exposed to changing market conditions and has price certainty over the contract term which may be required for the QF to obtain financing or may allow the QF to obtain lower-cost financing. Ultimately, the LEO provides QFs flexibility in choosing an appropriate risk profile and puts QFs on a more even footing with the purchasing utility.

Q. HOW DO KENTUCKY'S REGULATIONS ADDRESS QF POWER SALE OPTIONS?

A. As with the FERC's regulations, Kentucky's regulations governing cogeneration and small power production facilities differentiate between rates for power offered on an as "available basis" and rates for power offered pursuant to a LEO.[19]

(2) Rates for purchase of output of qualifying facility with design capacity of 100 kilowatts or less. Each electric utility shall prepare standard rates for purchases from qualifying facilities with a design capacity of 100 kilowatts or less. These rates shall be just and reasonable to the electric customer of the utility, in the public interest and nondiscriminatory. These rates shall be based on avoided costs after consideration of the factors listed in subsection (5)(a) of this section and shall be subdivided into an energy component and a capacity component.

(a) Rates for power offered on an "as available" basis shall be based on the purchasing utility's avoided energy costs estimated at time of delivery.

(b) Rates for power offered on all legally enforceable obligations shall be based at the option of the qualifying facility on either avoided costs at the time of delivery or avoided costs at the time the legally enforceable obligation is incurred. The capacity component shall be based on supply characteristics of qualifying facilities, and the aggregate capacity value of all 100 kilowatts or less facilities which supply power on a legally enforceable basis.

[19] 807 KAR 5.054, Section (7).

The passage above refers to the standard offer for facilities of 100 kW or less but similar language applies to contracts for larger facilities, with the same differentiation between as-available power and power offered under a LEO.

Q. WHAT IS THE SIGNIFICANCE OF THE DIFFERENTIATION BETWEEN AS-AVAILABLE OFFERS AND OFFERS PURSUANT TO A LEO?

A. The differentiation certainly implies that sales of exclusively as-available power are not conditioned on the establishment of a LEO. This makes sense because, as I previously discussed, the LEO is intended to provide a temporal benchmark for estimates of future avoided costs. It has no role or relevance in the context of as-available purchases at a wholly variable time of delivery-based rate for as-available power.

Q. HOW HAVE UTILITY PURCHASE OBLIGATIONS UNDER PURPA CHANGED OVER THE YEARS?

A. Recent developments have somewhat altered the implementation of QF eligibility and avoided cost-based prices. In 2006, PURPA was modified to reflect the emergence of competitive wholesale markets such as the PJM market by creating a rebuttable presumption that QFs with 20 MW of net capacity or less do not have non-discriminatory access to markets and that the utility purchase obligation "remains in effect, in all markets, for QFs sized 20 MW net capacity or smaller."[20]

The most recent changes to PURPA were made in 2020.[21] Among other changes were updates to acceptable avoided cost rates and the LEO. In Order No. 872, the FERC retained the requirement that QFs be able to obtain a fixed long-term avoided capacity rate

[20] FERC Docket No. RM06-10-000; Order No. 688 ¶72 at 46.
[21] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872.

when selling pursuant to a LEO.[22] In addition, while the FERC did not eliminate fixed long-term energy rates, it provided state regulatory authorities the flexibility to allow avoided energy rates to be fixed over a specified term at the time the LEO is established or allow avoided energy rates to vary based on avoided costs at the time of delivery for QFs selling pursuant to a LEO.[23] As to "[t]he right of QFs to establish a LEO, that right is neither limited nor expanded by a state's choice of LMP as the measure of avoided costs for energy."[24]

FERC Order No. 872, recognizing the importance of the LEO provisions to QF development, recognized the lack of guidance as to when and how a LEO is established in PURPA regulations.[25] In that Order, the FERC stated the following:[26]

> "Finally, we clarify that a QF must demonstrate commercial viability and a financial commitment to construct its facility pursuant to objective and reasonable state-determined criteria before the QF is entitled to a contract or LEO. States may not impose any requirements for a LEO other than a showing of commercial viability and a financial commitment to construct the facility. We also clarify in this final rule that, to the extent that the permitting factor is relied upon, a QF need only show that it has applied for all required permits and paid all applicable fees, and not that it has obtained such permits."

Q. SHOULD QFS BE DENIED A CONTRACT FOR SERVICE UNTIL THE QF ESTABLISHES A LEO?

A. No. There are many provisions of power purchase agreement ("PPA") contracts that remain valuable to both the utility, the QF, and the Commission regardless of whether the QF is selling output to the utility pursuant to a LEO, including liability provisions, payment terms, party and counterparty contact terms, force majeure and other provisions related to

[22] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ₱37 at 28.
[23] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ₱36 and ₱37 at 27.
[24] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ₱176 at 108.
[25] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ₱33 at 24-25.
[26] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ₱65 at 45.

special circumstances, among others. In the instant case, the Company has proposed to deny a contract for service under Tariff COGEN/SPP until the QF has established a LEO to the Company's satisfaction.[27] This is problematic because, as previously discussed, selling pursuant to a LEO is not the only pathway via which a QF may sell its output to a utility, and denying a QF a PPA contract would also deny the Commission its approval authority over a wholesale purchase contract.

Q. IS THERE A PARTICULAR SIGNIFICANCE TO THE COMPANY'S LEO PROPOSAL IN LIGHT OF ITS PROPOSAL TO CONSOLIDATE THE COGEN/SPP I AND COGEN/SPP II TARIFFS INTO A SINGLE COGEN/SPP TARIFF?

A. Yes. The consolidation would effectively treat small QFs, including residential and small commercial systems, identically to large QFs designed for the commercial sale of power, eliminating the streamlined approach historically used for systems of 100 kW or less. The application of a LEO condition, and the extensive parameters that the Company seeks to apply to this determination fails to reflect the meaningful differences that exist between small facilities purposed primarily for on-site use and utility-scale commercial ventures. This is particularly troubling under circumstances where the net metering tariff sunsets and the COGEN/SPP tariff becomes the only tariff option for on-site generation facilities.

Q. CAN YOU POINT TO SPECIFIC EXAMPLES OF WHY A UNIVERSAL LEO REQUIREMENT WOULD BE BURDENSOME TO SMALL QFS?

A. Yes. The Company has indicated that even an existing net metering customer that wishes to switch from net metering to the COGEN/SPP tariff would be subject to the blanket LEO

[27] Application, Section II, Exhibit E at 146.

requirement, including the provision of additional documentation as necessary to fulfill the various LEO requirements.[28] This is absurd, and points to the overly broad and burdensome nature of the requirements in the first place. An existing solar net metering customer clearly qualifies as a QF. The Company has conceded as much, albeit with the caveat "provided that the customer meets all the requirements for service under Tariff COGEN/SPP."[29] Yet they failed to identify any specific reasons why such would not be the case. And what better way to demonstrate the "commercial viability and a financial commitment to construct the facility", as the FERC articulated, than having already constructed and interconnected it?

Furthermore, it stands to reason that any new facility that meets the qualifications for net metering would also qualify as a QF eligible for service under the COGEN/SPP tariff. What purpose does it serve to make any such customer jump through the additional hoops that the Company seeks to establish via the LEO requirement? From the standpoint of small QFs, the Company's LEO proposal, and how it would apply it, appears to be intentionally obstructive to no beneficial purpose.

Q. WHAT ARE YOUR RECOMMENDATIONS TO THE COMMISSION REGARDING THE COMPANY'S PROPOSED LEO REQUIREMENT FOR THE COGEN/SPP TARIFF?

A. The Commission should reject the imposition of a LEO requirement for projects that seek only to provide as-available energy. In the alternative, if such a requirement is applied to as-available energy offers it should be limited to facilities larger than 100 kW. In the next section of my testimony, I discuss further refinements that should be made to the LEO parameters where they would apply.

[28] Company response to KYSEIA 2_7(b).
[29] Company response to KYSEIA 2_7(a).

D. The Company's Proposed LEO Framework & Criteria Are Unreasonable

Q. PLEASE PROVIDE AN OVERVIEW OF THE COMPANY'S PROPOSED LEO ESTABLISHMENT REGIME.

A. The Company's proposed COGEN/SPP tariff lists seven requirements that a QF would have to meet in order to establish a LEO, which as a previously discussed would serve as a pre-condition for establishing a power purchase contract. One of these requirements applies only to cogeneration facilities, leaving six that would apply to renewable QFs. A LEO would only be established once a QF has met the various criteria "to the Company's satisfaction."[30] According to the Company, the purpose of setting forth criteria within its tariff is to provide prospective customers with additional "transparency" on the process for establishing a LEO.[31]

Q. DO YOU AGREE WITH THE COMPANY'S STATED OBJECTIVE OF PROVIDING TRANSPARENCY IN THE FORMATION OF A LEO?

A. Yes. However, the Company's specific proposal fails to accomplish that objective, and the proposed criteria themselves are unduly burdensome, especially for small QFs. That is, there should be well-defined standards for establishing a LEO, but the Company's proposal does not do so. Rather, it seems more designed to: (i) erect barriers to QF deployment, particularly among small QFs, while (ii) giving the Company "cover" to do so in the form of vaguely defined tariff language.

[30] Application, Section II, Exhibit E at 146.
[31] Company response to KPSC 2_5(b).

Q. WHAT PROBLEMS HAVE YOU IDENTIFIED WITH THE COMPANY'S PROPOSED LEO ESTABLISHMENT FRAMEWORK AND THE ACCOMPANYING CRITERIA?

A. There are numerous problems. First and foremost, the Company's proposal attempts to shift control over a QF establishing a LEO from the QF, and instead place it entirely within the Company's discretion. This problem is exacerbated by the fact that several of the LEO requirements lack firm or definitive criteria, bounds on the timing of Company determinations, or guidance or examples of what would constitute acceptable information that should be provided by the QF for this purpose. The ultimate discretionary character renders the purported enhanced "transparency" mere lip service.

Beyond that overarching characteristic, several of the specific criteria that the Company proposes are problematic:

1. Requiring QFs to follow FERC certification procedures and file FERC Form 556, including for facilities that FERC has exempted (1 MW or less) from the Form 556 requirement.
2. Requiring vague, non-specific, and potentially untimely information regarding: (i) site control, and (ii) local permitting.
3. Requiring a deposit to cover the cost of a system impact study or facilities study should such studies become necessary.

All of these aspects are unreasonable generally, but the impacts would be felt most keenly by small projects, in particular if the LEO requirement was applied to all QF contracts as discussed in Section II(C) of my testimony. In particular, they would create

significant new hurdles for systems that serve no purpose for facilities that presently qualify as net metering generators (in the event of a sunset of the Company's net metering tariff).

Q. WHY SHOULD THE ESTABLISHMENT OF A LEO NOT BE DEPENDENT ON THE COMPANY'S DISCRETION?

A. In Order No. 872, the FERC adopted its proposal "to require QFs to demonstrate that a proposed project is commercially viable and that the QF has a financial commitment to construct the proposed project, pursuant to objective, reasonable, state-determined criteria in order to be eligible for a LEO" and repeatedly emphasized that the criteria for a QF to demonstrate "commercial viability and financial commitment" must be "objective and reasonable."[32]

"[T]he Company's satisfaction" is an inherently subjective standard that is subject to the whims of the Company and may vary from one QF to another depending on which person at the Company is determining when the Company is satisfied. FERC's objective and reasonable standard is intended such that "the criteria ensure that the purchasing utility does not unilaterally and unreasonably decide when its obligation arises."[33] The LEO is the utility's obligation that is established by the QF. Predicating the establishment of the LEO on a utility's satisfaction effectively renders the LEO meaningless in practical terms since nothing prevents the utility from moving the goal posts to suit its own purposes.

Q. ARE THERE DEFINITIVE REQUIREMENTS FOR A QF TO ESTABLISH A LEO?

A. No. The FERC, in Order No. 872, provides some "[e]xamples of factors a state could reasonably require are that a QF demonstrate that it is in the process of at least some of the following prerequisites" that include "(1) taking meaningful steps to obtain site control

[32] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ¶684 at 373-374.
[33] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ¶684 at 374.

adequate to commence construction of the project at the proposed location and (2) filing an interconnection application with the appropriate entity" and mentions other possible actions that could be required by a state such as a requirement "that the QF show that it has submitted all applications, including filing fees, to obtain all necessary local permitting and zoning approvals."[34]

However, the FERC is abundantly clear and explicit that "the factors that the state requires must be factors that are within the control of the QF"[35] and as the FERC stated in Order No. 872 "we clarify that it is appropriate for states to require a QF to demonstrate that it is in the process of obtaining site control or has applied for all local permitting and zoning approvals, rather than requiring a QF to show that it has obtained site control or secured local permitting and zoning."[36]

Q. WHAT ARE YOUR RECOMMENDATIONS REGARDING THE PROCESS THAT SHOULD BE USED FOR THE FORMATION OF A LEO?

A. The formation of a LEO should essentially implemented as a standard form that automatically confers the creation of the LEO upon the date of form submission as long as the information in that form is accurate. This form should be accompanied by guidance that reflects the specific documentation that is sufficient to document seminal aspects of a QF's commitment such as: (i) efforts to obtain site control, and (ii) efforts to obtain local permitting approval. A QF should be permitted to satisfy these criteria through means other than those specifically defined in the guidance, subject to the Company's review, and

[34] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ¶685 at 374.
[35] *Ibid*.
[36] FERC Docket Nos. RM19-15-000 and AD16-16-000; Order No. 872 ¶685 at 374-375.

without changing the effective date of the formation of a LEO based on the submission of the standard form.

That is, the LEO form would represent a certification from the developer that it is committed to a QF project and can furnish the requisite documentation consistent with the associated guidance. The Company could only reject the formation of a LEO if: (i) the certification is not accurate as of the date of submission (e.g., the developer cannot furnish documentation that satisfies the standard guidance), or (ii) the developer proffers non-standard documentation (i.e., outside of the guidance) that is later deemed to be insufficient.

Q. CAN YOU PROVIDE AN APPROPRIATE TEMPLATE FOR THE STANDARD LEO ESTABLISHMENT FORM?

A. Yes. I have attached the standard Notice of Commitment form used by the Duke Energy utilities in North Carolina for facilities of 1,000 kW or less as Exhibit JRB-2, and the somewhat more expansive form used for larger facilities as Exhibit JRB-3. The Duke Energy North Carolina utilities have extensive experience with QF contracting and Kentucky would benefit from taking advantage of this experience in standardizing the LEO establishment regime for Kentucky Power.

Q. PLEASE EXPLAIN WHY THE COMPANY'S PROPOSAL TO REQUIRE SUBMISSION OF DOCUMENTATION OF FERC FORM NO. 556 IS UNREASONABLE.

A. The FERC has exempted QFs of 1 MW or less from having to file Form No. 556 to establish their status as a QF. There is no reason why this this exemption should not be conferred to QFs in Kentucky Power's service territory. Requiring a copy of a facility's Form No. 556

when it is not required by the FERC creates an unnecessary administrative step for no purpose. The QF must spend time filling out and filing the form, while the Company must then (presumably) expend resources reviewing it.[37] Yet, there are hardly any circumstances under which a typical small on-site solar system would not qualify as a QF, and any such extraordinary circumstances would be obvious in a facility's interconnection application, and could be dealt with accordingly.

Q. WHAT IS YOUR RECOMMENDATION REGARDING THE LEO CRITERION REQUIRING SUBMISSION OF FERC FORM NO. 556 DOCUMENTATION?

A. It should be eliminated for any facility that is exempt from filing Form No. 556 according to the FERC's rules. If the Commission finds that a certification of QF eligibility should be required for enrollment on the Company's proposed COGEN/SPP tariff, a simple customer attestation that the facility meets the definition of a QF on the interconnection application would be sufficient.

Q. PLEASE EXPLAIN WHY THE INTERCONNECTION STUDY DEPOSIT ASPECT OF THE COMPANY'S PROPOSED LEO CRITERIA IS UNREASONABLE.

A. For many small QFs system impact and facilities studies are not likely to be necessary. Conditioning a purchase obligation on the provision of a deposit for activities that are unlikely to be undertaken for many QFs establishes an unnecessary obstacle and administrative inefficiencies. Customers would have to pay a potentially considerable cost up-front regardless of whether any study will actually be needed, while the Company would need to expend resources tracking deposits and issuing refunds. No one benefits from this approach. Furthermore, tethering the establishment of a LEO to interconnection

[37] If no such review on the part of the Company takes place there is no reason for its submission to be required in the first place.

milestones leaves control over that factor in the hands of the utility, which is inappropriate for the reasons I have already discussed.

Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION REGARDING THE COMPANY'S PROPOSED INTERCONNECTION STUDY DEPOSIT REQUIREMENT?

A. I recommend that this element be eliminated from the LEO criteria in full. In the alternative, it should be modified so that: (i) it only applies to large facilities (e.g., larger than 1 MW) that are more likely to require additional study, and (ii) the Company should be subject to strictly enforced timelines for providing information on estimated study costs to prospective QFs.

E. Demand Rate Requirement

Q. PLEASE SUMMARIZE THE COMPANY'S PROPOSAL TO REQUIRE QFS WITH A DESIGN CAPACITY OF MORE THAN 10 KW TO PURCHASE POWER FROM THE COMPANY ON A DEMAND-METERED TARIFF.

A. The proposed consolidated tariff requires all QFs with a "total design capacity" of more than 10 kW to purchase power from the Company on "demand-metered tariffs" unless the QF enters into a buy-all/sell-all arrangement under Option 3.[38] Additionally, the billing demand under the demand-metered tariff is set as the highest billing demand "for the current and previous two billing periods."[39] This requirement is present in current COGEN/SPP I tariff although it is absent from the current COGEN/SPP II tariff, likely because any customer seeking to install a QF larger than 100 kW would already be on a

[38] Application, Section II, Exhibit E at 143.
[39] *Ibid*.

demand rate tariff. No such requirement exists for customers enrolled on the Company's net metering tariffs.

Q. HOW DOES THE COMPANY JUSTIFY THIS REQUIREMENT?

A. In response to discovery, the Company stated that it is necessary to ensure appropriate recovery of existing, or fixed, system costs. The Company declined to provide any explanation or justification for the specific 10 kW threshold.[40]

Q. DO YOU SUPPORT RETAINING THIS REQUIREMENT IN THE COMPANY'S PROPOSED CONSOLIDATED COGEN/SPP TARIFF?

A. No. The practical impact of this requirement would be to either impose a tacit limit on system sizes for residential and small commercial customers, or shift customers for whom non-demand rates have historically been determined to be appropriate to a demand rate. Both such outcomes amount to discriminatory treatment that is not consistent with PURPA requirements. Furthermore, the specific size threshold is arbitrary.

Q. PLEASE FURTHER EXPLAIN YOUR OBJECTIONS TO THE DEMAND RATE REQUIREMENT.

A. There are multiple issues with this requirement for residential QFs. First, the only demand-metered residential tariff offered by the Company is Tariff R.S.D. (Residential Demand-Metered Electric Service) for which "[a]vailability is limited to the first 1,000 customers applying for service under this tariff." [41] After the Company is no longer obligated to offer net metering under KRS 278.466(1), the only option available will be tariff(s) COGEN/SPP. For residential customers, the demand-metered tariff requirement effectively limits additional residential renewable energy installations in the Company's service

[40] Company response to KYSEIA 1_1(c).
[41] Application, Section II, Exhibit E at 49.

territory to however many of the 1,000 first customer applications for Tariff R.S.D. remain at that time. PURPA provides for no such arbitrary limit on the number of QFs eligible to sell to the Company.

Second, the demand-metered tariff requirement is particularly discriminatory against QFs taking service under a residential tariff. None of the Company's other three residential tariffs, including the base residential rate Tariff R.S., include a demand-based billing component, while non-residential customers taking service under the base rates for general service, large general service, and industrial general service (i.e., Tariff G.S., Tariff L.G.S., and Tariff I.G.S.) already have a demand-based billing component included in the standard rate and without a limit placed on the number of customers allowed to take service under the tariff.

Q. HOW ARE THE REQUIREMENTS FOR PURPA RELEVANT TO THE DEMAND RATE REQUIREMENT?

A. The demand-metered tariff requirement relates specifically to sales by the Company to QFs. Rates for sales must "not discriminate against any qualifying facility in comparison to rates for sales to other customers served by the electric utility."[42] 18 CFR § 292.305(a)(2) clarifies that "[r]ates for sales … shall not be considered to discriminate against any qualifying facility to the extent that such rates apply to the utility's other customers with similar load or other cost-related characteristics." In this case, specific to residential QFs, I consider the phrase "other customers with similar load or other cost-related characteristics" to most reasonably refer to the broader residential customer class. As previously mentioned, eligibility for the single demand-metered residential tariff is limited

[42] 18 CFR § 292.305(a)(1)(ii).

to the first 1,000 applicants and is not even a rate schedule available to the broader residential customer class as a whole and therefore would not meet the standard for a non-discriminatory rate under 18 CFR § 292.305(a)(2).

In addition, even if the Commission were to determine that the quantity-restricted availability of non-standard residential rate Tariff R.S.D. sufficiently met the standard for a non-discriminatory rate under 18 CFR § 292.305(a)(2), the demand-metered tariff requirement for the residential class under the COGEN/SPP rates – both the existing COGEN/SPP I and the proposed consolidated COGEN/SPP – should still be considered discriminatory against residential QFs under 18 CFR § 292.305(a)(1)(ii) because it imposes additional minimum billing demand requirements in excess of those found in Tariff R.S.D..

The monthly billing demand under Tariff R.S.D. is determined as "Customer's demand will be taken monthly to be the highest registration of a 60 minute integrating demand meter or indicator during the on- peak period."[43] Tariff R.S.D. contains no clauses providing for a minimum monthly billing demand based on prior months' billing demand. However, both the proposed and existing tariffs COGEN/SPP all include the additional billing demand caveat of "the monthly billing demand under such tariffs shall be the highest determined for the current and previous two billing periods."[44]

This particular minimum billing demand requirement is only applied to sales by the utility to QFs and is not present in any of the base tariffs for the residential, general service, large general service, or industrial customer classes. While the residential Tariff R.S.D., in particular, has no clause setting a minimum monthly billing demand in relation to prior months' billing demand, the minimum billing demand clause in the QF tariff(s) is also

[43] Application, Section II, Exhibit E at 49.
[44] Application, Section II, Exhibit E at 143.

different than related clauses in the base rates for the other customer classes. Because the COGEN/SPP tariffs impose an additional minimum monthly billing demand clause on QFs not found in any other rates, that portion of tariff(s) COGEN/SPP is, in my view, discriminatory against QFs.

F. Metering Charges

Q. PLEASE DESCRIBE THE METERING CHARGES SPECIFIED IN THE COMPANY'S PROPOSED COGEN/SPP TARIFF.

A. The proposed COGEN/SPP tariff contains the same monthly metering charges currently present in the COGEN/SPP I and COGEN/SPP II tariffs. The amount of the metering charge varies from $9.25/month to $12.40/month based on a single- or polyphase interconnection and whether the meter records standard or time-of-day ("TOD") measurements. The Company has not proposed to change these charges in the current proceeding. [45]

Q. HOW IMPACTFUL ARE THE ADDITIONAL METERING CHARGES ON QFS?

A. They additional costs are meaningful for small QFs. For example, the lowest current charge of $9.25/month for a non-TOD single phase meter equates to $111/year and $2,775 over a 25-year system lifetime (assuming it remains the same). At a hypothetical wholesale energy-only rate for exports of 4 cents/kWh, a customer would have to export at least 2,775 kWh annually (300 kWh/month) just to break even. In other words, the value of the first 300 kWh of deliveries to the Company each month is effectively "lost" due to the metering charge. A residential customer with a modestly sized system of 5 kW could easily end up underwater from the standpoint of net compensation for exports.

[45] *Ibid*.

Q. ARE THE ADDITIONAL METERING CHARGES FOR QFS JUSTIFIED?

A. I have not conducted an evaluation of the cost basis for the present metering charges at present. However, they will become inaccurate with the impending deployment of advanced metering infrastructure ("AMI") in the Company's service territory since any modern AMI meter should be capable of the two-channel measurement necessary to implement for QFs customers that take service under Option 2 of the COGEN/SPP tariff (sale of excess after on-site use). Given that any customer with an AMI meter would not require different or additional metering, no additional metering charge should apply to such customers. In addition, the Company can ensure that no additional metering is necessary once it begins deploying AMI by installing an AMI meter for any COGEN/SPP customer that requires a meter replacement.

Q. WHAT ARE YOUR RECOMMENDATIONS REGARDING METERING CHARGES UNDER THE PROPOSED COGEN/SPP TARIFF?

A. The Commission should: (i) direct the Company to ensure that all meter replacements that occur after the Company begins AMI deployment to use an AMI meter as the new meter, and (ii) eliminate incremental metering charges for all COGEN/SPP customers that receive service through an AMI meter. It would also be reasonable for the Company to prioritize AMI meter replacements for COGEN/SPP customers that receive service through a non-AMI meter in order the alleviate additional and unnecessary costs to QFs sooner rather than later.

G. Contract Duration Specification

Q. WHAT ARE YOUR COMMENTS REGARDING THE QF CONTRACT DURATION SPECIFIED IN THE PROPOSED COGEN/SPP TARIFF?

A. The Company should be required to modify its existing and proposed language in the COGEN/SPP tariff(s) (i.e., existing and proposed consolidated tariffs) regarding the available contract term lengths. The existing language states that "Contracts under this tariff shall be made for a term not less than five (5) years" and the Company proposed to add an additional clause so that the full sentence will state "Contracts under this tariff shall be made for a term not less than five (5) years and no longer than twenty (20) years."[46] (emphasis added to new proposed language).

"Currently the tariff stipulates a minimum duration of five years. The Company proposes to establish that the maximum contract shall not exceed 20 years."[47] A 20-year contract term is, in my opinion and experience, of sufficient length to provide certainty as to the terms and conditions under which a QF will make sales to and purchases from an electric utility and support a QF seeking financing and potentially other financial arrangements.

In response to discovery, the Company "Confirmed" that a QF will be able to choose a contract length of between 5 and 20 years.[48] I recommend modifying the proposed language regarding contract duration to reflect that a QF may choose a contract term within the proposed range, possibly modifying the proposed sentence to the following (modifications to proposal in *italics*): "Contracts under this tariff shall be made for a term

[46] Application, Section II, Exhibit E at 145.
[47] Cobern Direct at 24:9-11.
[48] Company response to KYSEIA 1_3(a).

determined by the eligible customer that is not less than five (5) years and no longer than twenty (20) years."

III. CONCLUSION

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS TO THE COMMISSION.

A. First, the Commission should establish that, upon the eventual closure of the Company's net metering program, the only change that should occur for facilities that would otherwise qualify for net metering is the compensation rate for exports. Accordingly, the Commission should direct the Company to maintain all aspects of the present interconnection application and tariff enrollment process used for net metering without any additional documentation, eligibility verification requirements, enrollment steps, or other administrative processes. Given that any facility that presently qualifies for net metering would by definition be a QF, there is no justification for additional processes that could present additional complexities and barriers for small self-generation QFs.

With respect to the Company's proposed consolidated COGEN/SPP tariff, I recommend the following modifications, several of which relate to ensuring a smooth enrollment process for small self-generation QFs:

1.) 45 kW Minimum Size Threshold: The erroneous 45 kW minimum system size threshold should be eliminated.

2.) Applicability of the LEO Criteria: Any LEO framework that is adopted should not be applied to offers of as-available energy, such that a purchase contract for as-available energy is not conditioned on the QF establishing a LEO.

3.) Specific Elements of the LEO Framework and Criteria: The LEO framework, where it applies, should be modified in the following ways:

- The process for establishing a LEO should place control of such establishment within control of the QF, provided the QF submits accurate information in a standard Notice of Commitment form used for this purpose.
- The standard Notice of Commitment form should use the small QF (1 MW or less) and large QF (larger than 1 MW) forms employed by Duke Energy for its North Carolina operations (attached to my testimony as Exhibits JRB-2 and JRB-3) as templates.
- The standard Notice of Commitment form should be accompanied by guidance listing specific documentation that satisfies criteria associated with the QF having undertaken meaningful efforts to: (i) obtain site control, and (ii) secure requisite permits. The use of such specified documentation should confer an automatic determination that the applicable criterion has been satisfied, while non-standard documentation may also be used subject to a case-by-case review by the Company.
- The Company's proposed LEO criterion requiring the submission of a FERC Form No. 556 to certify eligibility as a QF should be eliminated for QFs of 1 MW or less, which the FERC has exempted from the Form No. 556 filing requirement.
- The Company's proposed LEO criterion requiring the submission of a deposit for potential interconnection studies should be eliminated in its entirety.

4.) Demand Charge Requirement for QFs of 10 kW or Larger: The requirement that COGEN/SPP customers with system sizes larger than 10 kW pay a QF-specific demand charge should be eliminated.

5.) Metering Charges: The Commission should direct the Company to: (i) utilize AMI meters for any meter replacements necessary for service under the COGEN/SPP tariff for

new enrollments after it begins AMI deployment, and (ii) eliminate additional metering charges on COGEN/SPP self-generation customers that take service through an AMI meter.

6.) Contract Duration Language: The Commission should direct the Company to revise the language in the COGEN/SPP tariff to clarify that the contract duration may range from five years to twenty years as elected by the QF.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF KENTUCKY POWER COMPANY FOR (1) A GENERAL ADJUSTMENT OF ITS RATES FOR ELECTRIC SERVICE; (2) APPROVAL OF TARIFFS AND RIDERS; (3) APPROVAL OF CERTAIN REGULATORY AND ACCOUNTING TREATMENTS; AND (4) ALL OTHER REQUIRED APPROVALS AND RELIEF	)	CASE NO. 2025-00257

AFFIDAVIT OF JUSTIN R. BARNES
VERIFICATION

JURISDICTION)
)
County of Franklin, Ohio)

The undersigned, Justin R. Barnes, being first duly sworn, states the following: The prepared pre-filed Direct Testimony and Exhibits attached thereto constitute the direct testimony of Affiant in the above-styled case. Affiant states that he would give the answers set forth in the pre-filed Direct Testimony if asked the questions propounded therein. Affiant further states that, to the best of his belief and knowledge, his statements made are true and correct. Further, Affiant saith not.

Justin Barnes
Name of Witness

SUBSCRIBED AND SWORN to before met this 17th day of November, 2025.

NOTARY PUBLIC

My Commission Expires: 03/31/2030

ABDOULAYE SOW, NOTARY PUBLIC
COMM. EXP. March 31, 2030
STATE OF OHIO

JUSTIN R. BARNES

(919) 825-3342, jbarnes@eq-research.com

EDUCATION

Michigan Technological University Houghton, Michigan
Master of Science, Environmental Policy, August 2006
Graduate-level work in Energy Policy.

University of Oklahoma Norman, Oklahoma
Bachelor of Science, Geography, December 2003
Area of concentration in Physical Geography.

RELEVANT EXPERIENCE

President, May 2023 – present
Director of Research, July 2015 – April 2023
Senior Analyst & Research Manager, March 2013 – July 2015
EQ Research, LLC Cary, North Carolina

- Oversee state legislative, regulatory policy, utility IRP and general rate case tracking services that covers policies such as net metering, interconnection standards, rate design, renewables portfolio standards, state energy planning, state and utility incentives, tax incentives, and permitting. Responsible for service design, formulating improvements based on client needs, and ultimate delivery of reports to clients. Expanded service to cover energy storage.
- Oversee and perform policy research and analysis to fulfill client requests, and for internal and published reports, focused primarily on drivers of distributed energy resource (DER) markets and policies.
- Provide expert witness testimony on topics including cost of service and cost allocation, general rate design, low-income issues. DER value, and DER policy including incentive program design, community solar program design, and DER-specific rate design issues.
- Managed the development of a solar power purchase agreement (PPA) toolkit for local governments, a comprehensive legal and policy resource for local governments interested in purchasing solar energy, and the planning and delivery of associated outreach efforts.

Senior Policy Analyst, January 2012 – May 2013;
Policy Analyst, September 2007 – December 2011
North Carolina Solar Center, N.C. State University Raleigh, North Carolina

- Responsible for researching and maintaining information for the Database of State Incentives for Renewables and Efficiency (DSIRE), the most comprehensive public source of renewables and energy efficiency incentives and policy data in the United States.
- Managed state-level regulatory tracking for private wind and solar companies.
- Coordinated the organization's participation in the SunShot Solar Outreach Partnership, a U.S. Department of Energy project to provide outreach and technical assistance for local governments to develop and transform local solar markets.
- Developed and presented educational workshops, reports, administered grant contracts and associated deliverables, provided support for the SunShot Initiative, and worked with diverse group of project partners on this effort.
- Responsible for maintaining the renewable portfolio standard dataset for the National Renewable Energy Laboratory for use in its electricity modeling and forecasting analysis.
- Authored the *DSIRE RPS Data Updates*, a monthly newsletter providing up-to-date data and historic compliance information on state RPS policies.

- Responded to information requests and provided technical assistance to the general public, government officials, media, and the energy industry on a wide range of subjects, including federal tax incentives, state property taxes, net metering, state renewable portfolios standard policies, and renewable energy credits.
- Extensive experience researching, understanding, and disseminating information on complex issues associated with utility regulation, policy best practices, and emerging issues.

SELECTED ARTICLES and PUBLICATIONS

- EQ Research and Synapse Energy Economics for Delaware Riverkeeper Network. *Envisioning Pennsylvania's Energy Future*. 2016.
- Barnes, J., R. Haynes. *The Great Guessing Game: How Much Net Metering Capacity is Left?*. September 2015. Published by EQ Research, LLC.
- Barnes, J., Kapla, K. *Solar Power Purchase Agreements (PPAs): A Toolkit for Local Governments*. July 2015. For the Interstate Renewable Energy Council, Inc. under the U.S. DOE SunShot Solar Outreach Partnership.
- Barnes, J., C. Barnes. *2013 RPS Legislation: Gauging the Impacts*. December 2013. Article in Solar Today.
- Barnes, J., C. Laurent, J. Uppal, C. Barnes, A. Heinemann. *Property Taxes and Solar PV: Policy, Practices, and Issues*. July 2013. For the U.S. DOE SunShot Solar Outreach Partnership.
- Kooles, K, J. Barnes. *Austin, Texas: What is the Value of Solar; Solar in Small Communities: Gaston County, North Carolina*; and *Solar in Small Communities: Columbia, Missouri*. 2013. Case Studies for the U.S. DOE SunShot Solar Outreach Partnership.
- Barnes, J., C. Barnes. *The Report of My Death Was An Exaggeration: Renewables Portfolio Standards Live On*. 2013. For Keyes, Fox & Wiedman.
- Barnes, J. *Why Tradable SRECs are Ruining Distributed Solar*. 2012. Guest Post in Greentech Media Solar.
- Barnes, J., multiple co-authors. *State Solar Incentives and Policy Trends*. Annually for five years, 2008-2012. For the Interstate Renewable Energy Council, Inc.
- Barnes, J. *Solar for Everyone?* 2012. Article in Solar Power World On-line.
- Barnes, J., L. Varnado. *Why Bother? Capturing the Value of Net Metering in Competitive Choice Markets*. 2011. American Solar Energy Society Conference Proceedings.
- Barnes, J. *SREC Markets: The Murky Side of Solar*. 2011. Article in State and Local Energy Report.
- Barnes, J., L. Varnado. *The Intersection of Net Metering and Retail Choice: an overview of policy, practice, and issues*. 2010. For the Interstate Renewable Energy Council, Inc.

TESTIMONY & OTHER REGULATORY ASSISTANCE

Indiana Utility Regulatory Commission. Cause No. 46258. September 2025. On behalf of the Citizen's Action Coalition of Indiana. AES Indiana generation rate case application. Addressed: (a) the proper calculation of a residential customer charge based on customer-related costs, (b) the Company's evaluation of cost of services differences between multi-family and non-multi-family customers and the justification for a lower customer charge for multi-family customers, and (c) the reasonableness of the Company's declining block rate design from a cost of service standpoint, with a particular focus on customers that rely on electric heating. Developed a consolidated residential rate design proposal encompassing these collective issues.

West Virginia Public Service Commission. Case No. 24-0854-E-42T. April 2025. On behalf of the West Virginia Citizen Action Group, Solar United Neighbors, and Energy Efficient West Virginia. Appalachian Power Company and Wheeling Power Company general rate case. Addressed issues that included the utilities' proposed elimination of net metering and related issues of subsidization, calculation of the value of DER exports, the Companies' collective ratemaking and cost tracker proposals, the need

for enhanced low-income financial support mechanisms and other means of reducing energy burdens on low-income customers, the cost basis for reconnection charges, demand limits within the small commercial rate schedules, deficiencies in the Companies' residential TOU rate, and the cost basis of the Companies' LED lighting rate proposals.

New Mexico Public Regulation Commission. Case No. 24-00089-UT. January 2025. On behalf of the Coalition for Community Solar Access. Public Service Company of New Mexico. Testimony in support of a Stipulation regarding the appropriate functionalization of rate impact banding adjustments as related to the calculation of the community solar subscriber credit.

Michigan Public Service Commission. Case No. U-21534. July 2024. On behalf of the Michigan Energy Innovation Business Council and The Institute for Energy Innovation. DTE Electric Company general rate case application. Sponsored testimony recommending revisions to the utility's proposed time-varying rate options for non-residential customers addressing issues including revenue-neutral rate schedule mapping, appropriate pricing windows, enrollment caps, implementation timeline, and customer outreach and tools.

Indiana Utility Regulatory Commission. Cause No. 45990. March 2024. On behalf of the Citizen's Action Coalition of Indiana. Centerpoint Indiana South generation rate case application. Addressed: (a) numerous cost of service and cost allocation issues associated with production plant, transmission plant, coal ash disposal, MISO expenses, and service advertisement expenses; (b) cost-shifting caused by special contract customers and customers served under an industrial back-up service rate; and (c) the proper calculation of a residential customer charge based on customer-related costs.

West Virginia Public Service Commission. Case No. 23-0460-E-42T. November 2023. On behalf of the West Virginia Citizen Action Group, Solar United Neighbors, and Energy Efficient West Virginia. Monongahela Power and Potomac Edison general rate case application. Addressed issues that included the utilities' proposed elimination of net metering and related issues of subsidization, the methodology for setting monthly customer charges, demand limits within the small commercial rate schedules, piloting non-residential TOU rates, distribution cost allocation, the utilities' proposed distribution infrastructure investment program and long-term distribution planning, and support mechanisms for reducing energy burdens on low-income customers.

New Mexico Public Regulation Commission. Case No. 23-00071-UT. November 2023. On behalf of the Coalition for Community Solar Access. New Mexico community solar tariffs implementation proceeding. Addressed the methodology for quantifying any subsidy provided to community solar participants, the calculation of the community solar subsidy cap associated with the New Mexico's community solar law, the utilities' proposed administrative cost riders, and the utilities' proposed community solar eligibility restrictions.

Michigan Public Service Commission. Case No. U-21297. June 2023. On behalf of the Michigan Energy Innovation Business Council and The Institute for Energy Innovation. DTE Electric Company general rate case application. Sponsored a proposal for the establishment of time-varying rate options for non-residential customers.

North Carolina Utilities Commission. Docket Nos. E-34 Sub 54 and Sub 55. June 2023. On behalf of Appalachian Voices. New River Light and Power general rate case application. Analyzed the utility's proposal to establish NEM with a supplemental standby charge based on an evaluation of customer-sited solar costs and benefits and the utility's proposal for an increase in the residential fixed charge. Recommended the elimination of the DG standby charge based on corrections to NRLP's solar value analysis and a decrease in the residential fixed charge based on revised calculations of customer-related costs.

Georgia Public Service Commission. Docket No. 44280. Direct Testimony in October 2022 and Supplemental Testimony in November 2022. On behalf of Georgia Interfaith Power and Light. Georgia Power Company general rate case application. In Direct Testimony, provided a review and analysis of the cost allocation regime for coal combustion residual costs and provided recommended changes thereto; and evaluated the Company's proposals designed to shift residential customers to service under demand rate designs, including general analysis of the cost causation basis for demand rates and specific attributes and Company experience with its residential demand rate. In Supplemental Testimony, evaluated the Company's proposal to end its monthly netting DG tariff (i.e., NEM) and require mandatory demand rate service for future DG customers and recommended that NEM be retained without a mandatory demand rate requirement based on analysis demonstrating that doing so would not adversely affect non-DG customers.

Wisconsin Public Service Commission. Docket No. 5-UR-110. September 2022. On behalf of RENEW Wisconsin. Wisconsin Electric Power Company general rate case application. Provided an exhibit showing residential fixed charges among all major IOUs in the nation and testimony explaining the methodology used to develop the exhibit.

Wisconsin Public Service Commission. Docket No. 6690-UR-127. September 2022. On behalf of RENEW Wisconsin. Wisconsin Public Service Corporation general rate case application. Provided an exhibit showing residential fixed charges among all major IOUs in the nation and testimony explaining the methodology used to develop the exhibit.

Wisconsin Public Service Commission. 3270-UR-124. September 2022. On behalf of RENEW Wisconsin. Madison Gas and Electric general rate case application. Provided an exhibit showing residential fixed charges among all major IOUs in the nation and testimony explaining the methodology used to develop the exhibit. (*Note: Exhibit was introduced at the hearing and testimony on the methodology provided orally at the hearing; written testimony was not filed).*

Michigan Public Service Commission. Case No. U-20836. May 2022. On behalf of the Michigan Energy Innovation Business Council and The Institute for Energy Innovation. DTE Electric Company general rate case application. Addressed the utility's proposal for changes to its DG Tariff, including excluding generation capacity value from the export rate and requiring DG customers to take service under a newly proposed residential demand rate. Also evaluated the cost causation and other rate attributes of the proposed residential demand rate.

Virginia State Corporation Commission. Docket No. PUR-2021-00171. January 2022. On behalf of Appalachian Voices. Old Dominion Power Company general rate case application. Evaluation of the cost basis for the residential customer charge, AMI deployment and the timeline for deployment of TOU rates, class allocation of distribution and production demand costs, and the Company's proposal for a DSM/EE pilot program and cost recovery rider.

Michigan Public Service Commission. Case No. U-20963. June 2021. On behalf of the Michigan Energy Innovation Business Council and the Institute for Energy Innovation. Consumers Energy Company general rate case. Provided an evaluation of the utility's proposed home battery program and offered recommendations for modifications to the program to improve its cost-effectiveness and delivery of benefits to participants and non-participants through changes to battery operational plans, elimination of restrictions on consumer use of the batteries, battery sizing modifications to fit actual customer needs, and use of solar-paired storage to provide greater resiliency.

Colorado Public Utilities Commission. Proceeding No. 20AL-0432E. March 2021. On behalf of the Colorado Solar and Storage Association and the Solar Energy Industries Association. Public Service

Company of Colorado (Xcel Energy Colorado) general rate case. Provided analysis and recommendations on several non-residential rate design issues, including the utility's practice of switching small commercial customers to demand rates, relaxing the demand threshold at which commercial customers are subject to demand rates, the utility's proposal for modifying time-varying pricing windows, and the establishment of a pilot time-of-use rate for Secondary General (SG) commercial customers intended to remedy the misalignment between the SG non-coincident demand rate design and cost causation and set a foundation for a default time-varying rate option for SG class customers.

Kentucky Public Service Commission. Docket Nos. 2020-00349 and 2020-00350. March 2021 (Phase 1) and July/August 2021 (Phase 2). On behalf of the Kentucky Solar Energy Industries Association. Kentucky Utilities and Louisville Gas and Electric general rate case applications. Provided an analysis of the utilities' current tariffs governing purchases from qualifying facilities and recommended changes to align them with state regulations, recent precedent, and accepted methodologies of energy and capacity pricing.

South Carolina Public Service Commission. Docket Nos. 2020-264-E and 2020-265-E. February 2021. On behalf of the Solar Energy Industries Association and the North Carolina Sustainable Energy Association. Docket for establishing a Solar Choice tariff for customers of Duke Energy Carolinas and Duke Energy Progress. Provided testimony in support of a stipulated settlement discussing the critical role that a proposed smart thermostat rebate and enabling technologies more generally play in the successfully meeting the legislative objectives for Solar Choice tariffs.

South Carolina Public Service Commission. Docket No. 2020-229-E. January 2021. On behalf of the Solar Energy Industries Association and the North Carolina Sustainable Energy Association. Docket for establishing a Solar Choice tariff for customers of Dominion Energy South Carolina. Provided an analysis of the proposed Solar Choice tariff from the standpoint of NEM successor best practices, alignment with the enabling statute, and cost of service basis. Offered an alternative Solar Choice tariff proposal based on this analysis. Surrebuttal testimony provided an evaluation of solar customer cost of service correcting erroneous assumptions used by the Office of Regulatory Staff in its direct testimony.

Virginia State Corporation Commission. Docket No. PUR-2020-00134. January 2021. On behalf of the Behind the Meter Solar Alliance. Docket for Dominion Virginia's 2020 RPS Plan. Offered testimony supporting the designation of small-scale resource carve-out eligibility being limited to behind the meter resources, based on the underlying Virginia statute and other public policy reasons.

South Carolina Public Service Commission. Docket No. 2019-182-E. October 2020. On behalf of the Solar Energy Industries Association and the North Carolina Sustainable Energy Association. Docket for establishing a cost-benefit analysis methodology and protocols for net metering and DERs. Provided discussion of historic regulatory use of DG cost-benefit and cost of service studies, how results should be viewed, and a discussion of the role of economic benefits and resiliency in DER cost-benefit analyses.

Kentucky Public Service Commission. Docket No. 2020-00174. October 2020. On behalf of the Kentucky Solar Industries Association. Kentucky Power general rate case. Provided an evaluation and critique of the cost of service support for, and design of, Kentucky Power's proposed net metering successor tariff and offered recommendations for developing cost-based DER rate designs. Also recommended changes to the utility's QF tariff and calculation of capacity costs.

New Jersey Board of Public Utilities. Docket No. EO18101111. September 2020. On behalf of Sunrun, Inc. Public Service Gas and Electric energy storage deployment plan proposal. Offered alternative proposal for a program utilizing non-utility owned energy storage assets under an aggregator model with elements for benefits sharing and ratepayer risk reduction.

Virginia State Corporation Commission. Docket No. PUR-2020-00015. July 2020. On behalf of Appalachian Voices. Appalachian Power Company general rate case. Analysis of the cost basis for the residential customer charge, the Company's winter declining block rate proposal, and a proposed Coal Asset Retirement Rider (Rider CAR) providing for advance collection of anticipated accelerated depreciation of coal generation assets. Provided an alternative residential customer charge recommendation and an alternative rates proposal for addressing winter bill volatility for electric heating customers.

North Carolina Utilities Commission. Docket No. E-2 Sub 1219. April 2020. On behalf of the North Carolina Sustainable Energy Association. Duke Energy Progress general rate case. Provided analysis of available rate options for electric vehicle charging and recommended the adoption of residential and non-residential EV-specific rate options and appropriate design characteristics for those rate options.

North Carolina Utilities Commission. Docket No. E-7 Sub 1214. January 2020. On behalf of the North Carolina Sustainable Energy Association. Duke Energy Carolinas general rate case. Provided analysis of available rate options for electric vehicle charging and recommended the adoption of residential and non-residential EV-specific rate options and appropriate design characteristics for those rate options.

Virginia State Corporation Commission. Docket No. PUR-2019-00060. November 2019. On behalf of Appalachian Voices. Old Dominion Power Company general rate case application. Analysis of the cost basis for the residential customer charge, proposal to change the residential customer charge from a monthly charge to a daily charge, and design of proposed customer green power program and utility owned commercial behind the meter solar proposal. Proposed modified optional rate structure for mid- to large-size non-residential customers with on-site solar and/or low load factors.

Georgia Public Service Commission. Docket No. 42516. October 2019. On behalf of Georgia Interfaith Power and Light, Southface Energy Institute, and Vote Solar. Georgia Power Company general rate case application. Analysis of the cost basis for the residential customer charge, the validity of the utility's minimum-intercept study, and a proposal to change the residential customer charge from a monthly charge to a daily charge.

Hawaii Public Utilities Commission. Docket No. 2018-0368. July 2019. On behalf of the Hawaii PV Coalition. Hawaii Electric Light Company (HELCO) general rate case application. Provided analysis of HELCO's proposed changes to its decoupling rider to make the decoupling charge non-bypassable and the alignment of the proposed modifications with state policy goals and the policy rationale for decoupling.

Virginia State Corporation Commission. Docket No. PUR-2019-00067. July 2019.* On behalf of the Southern Environmental Law Center. Appalachian Power Company residential electric vehicle (EV) rate proposal. Provided review and analysis of the proposal and developed comments discussing principles of time-of-use (TOU) rate design and proposing modifications to the Company's proposal to support greater equity among rural ratepayers and greater rate enrollment. ***This work involved comment preparation rather than testimony.**

New York Public Service Commission. Case No. 19-E-0065. May 2019. On behalf of The Alliance for Solar Choice. Consolidated Edison (ConEd) general rate case application. Provided review and analysis of the competitive impacts and alignment with state policy of ConEd's energy storage, distributed energy resource management system, and earnings adjustment mechanism (EAM) proposals. Proposed model for improving the utilization of customer-sited storage in existing demand response programs and an alternative EAM supportive of utilization of third party-owned battery storage.

South Carolina Public Service Commission. Docket No. 2018-318-E. March 2019. On behalf of Vote Solar. Duke Energy Progress general rate case application. Analysis of the cost basis for the residential customer charge and validity of the utility's minimum system study, AMI-enabled rate design plans, excess deferred income tax rider rate design, and grid modernization rider proposal, including the reasonableness of the program, class distribution of costs and benefits, and cost allocation.

South Carolina Public Service Commission. Docket No. 2018-319-E. February 2019. On behalf of Vote Solar. Duke Energy Carolinas general rate case application. Analysis of the cost basis for the residential customer charge and validity of the utility's minimum system study, AMI-enabled rate design plans, excess deferred income tax rider rate design, and grid modernization rider proposal, including the reasonableness of the program, class distribution of costs and benefits, and cost allocation.

New Orleans City Council. Docket No. UD-18-07. February 2019. On behalf of the Alliance for Affordable Energy. Entergy New Orleans general rate case application. Analysis of the cost basis for the residential customer charge, rate design for AMI, DSM and Grid Modernization Riders, and DSM program performance incentive proposal. Developed recommendations for the residential customer charge, rider rate design, and a revised DSM performance incentive mechanism.

New Hampshire Public Utilities Commission. Docket No. DE 17-189. May 2018. On behalf of Sunrun Inc. Review of Liberty Utilities application for approval of customer-sited battery storage program, analysis of time-of-use rate design, program cost-benefit analysis, cost-effectiveness of utility-owned vs. non-utility owned storage assets. Developed a proposal for an alternative program utilizing non-utility owned assets under an aggregator model with elements for benefits sharing and ratepayer risk reduction.

North Carolina Utilities Commission. Docket No. E-7 Sub 1146. January 2018. On behalf of the North Carolina Sustainable Energy Association. Duke Energy Carolinas general rate case application. Analysis of the cost basis for the residential customer charge and validity of the utility's minimum system study, allocation of coal ash remediation costs, and grid modernization rider proposal, including the reasonableness of the program, class distribution of costs and benefits, and cost allocation.

Ohio Public Utilities Commission. Docket No. 17-1263-EL-SSO. November 2017*. On behalf of the Ohio Environmental Council. ***Testimony prepared but not filed due to settlement in related case.** Duke Energy Ohio proposal to reduce compensation to net metering customers. Provided analysis of capacity value of solar net metering resources in the PJM market and distribution of that value to customers. Also analyzed the cost basis of the utility proposal for recovery of net metering credit costs, focused on PJM settlement protocols and how the value of DG customer exports is distributed among ratepayers, load-serving entities, and distribution utilities based on load settlement practices.

North Carolina Utilities Commission, Docket No. E-2 Sub 1142. October 2017. On behalf of the North Carolina Sustainable Energy Association. Duke Energy Progress general rate case application. Analysis of the cost basis for the residential customer charge and validity of the utility's minimum system study, allocation of coal ash remediation costs, and advanced metering infrastructure deployment plans and cost-benefit analysis.

Public Utility Commission of Texas, Control No. 46831. June 2017. On behalf of the Energy Freedom Coalition of America. El Paso Electric general rate case application, including separate DG customer class. Analysis of separate DG rate class and rate design proposal, cost basis, DG load research study, and analysis of DG costs and benefits, and alignment of demand ratchets with cost causation principles and state policy goals, focused on impacts on customer-sited storage.

Utah Public Service Commission, Docket No. 14-035-114. June 2017. On behalf of Utah Clean Energy. Rocky Mountain Power application for separate distributed generation (DG) rate class. Provided

analysis of grandfathering of existing DG customers and best practices for review of DG customer rates and DG value. Developed proposal for addressing revisions to DG customer rates in the future.

Colorado Public Utilities Commission, Proceeding No. 16A-0055E. May 2016. On behalf of the Energy Freedom Coalition of America. Public Service Company of Colorado application for solar energy purchase program. Analysis of program design from the perspective of customer demand and needs, and potential competitive impacts. Proposed alternative program design.

Public Utility Commission of Texas, Control No. 44941. December 2015. On behalf of Sunrun, Inc. El Paso Electric general rate case application, including separate DG customer class. Analysis of separate rate class and rate design proposal, cost basis, DG load research study, and analysis of DG costs and benefits.

Oklahoma Corporation Commission, Cause No. PUD 201500274. November 2015. On behalf of the Alliance for Solar Choice. Analysis of Oklahoma Gas & Electric proposal to place distributed generation customers on separate rates, rate impacts, cost basis of proposal, and alignment with rate design principles.

South Carolina Public Service Commission, Docket No. 2015-54-E. May 2015. On behalf of The Alliance for Solar Choice. South Carolina Electric & Gas application for distributed energy programs. Alignment of proposed programs with distributed energy best practices throughout the U.S., including incentive rate design and community solar program design.

South Carolina Public Service Commission, Docket No. 2015-53-E. April 2015. On behalf of The Alliance for Solar Choice. Duke Energy Carolinas application for distributed energy programs. Alignment of proposed programs with distributed energy best practices throughout the U.S., including incentive rate design and community solar program design.

South Carolina Public Service Commission, Docket No. 2015-55-E. April 2015. On behalf of The Alliance for Solar Choice. Duke Energy Progress application for distributed energy programs. Alignment of proposed programs with distributed energy best practices throughout the U.S., including incentive rate design and community solar program design.

South Carolina Public Service Commission, Docket No. 2014-246-E. December 2014. On behalf of The Alliance for Solar Choice. Generic investigation of distributed energy policy. Distributed energy best practices, including net metering and rate design for distributed energy customers.

AWARDS, HONORS & AFFILIATIONS

- Solar Power World Magazine, Editorial Advisory Board Member (October 2011 – March 2013)
- Michigan Tech Finalist for the Midwest Association of Graduate Schools Distinguished Masters Thesis Awards (2007)
- Sustainable Futures Institute Graduate Scholar Michigan Tech University (2005-2006)

NOTICE OF COMMITMENT TO SELL THE OUTPUT OF A SMALL QUALIFYING FACILITY ELIGIBLE FOR SCHEDULE PP TO Duke Energy Carolinas, LLC or Duke Energy Progress, LLC

This notice of commitment form establishes the procedure for a qualifying facility ("QF") with a nameplate capacity up to 1 MW_{AC} that is requesting to establish a legally enforceable obligation ("LEO") and to commit to sell the output of a proposed QF generating facility pursuant to Duke Energy Carolinas, LLC's or Duke Energy Progress, LLC's (the "Company") Schedule PP (NC) and standard offer power purchase agreement and terms and conditions. QFs submitting this form after November 1, 2021, are committing to sell the full output of the generating facility to the Company pursuant to Schedule PP and the avoided cost rates and terms filed with Commission in Docket No. E-100, Sub 175, until such time as new rates are filed with the Commission in the next biennial avoided cost proceeding. Eligibility of QFs above 100 kW for Schedule PP shall be determined under N.C. Gen. Stat. § 62-156(b) (limiting eligibility to an aggregate 100 MW per Company) based upon the Effective Date of the LEO established under this Notice of Commitment form. Please note that a different form is required for QFs with a nameplate capacity greater than 1 MW_{AC} seeking to commit to sell their output to the Company under a negotiated power purchase arrangement as provided for in N.C. Gen. Stat. § 62-156(c) and 18 C.F.R. 292.304(d)(2).

1. Delivery; Notices to Company. The QF shall deliver, via email, its executed Notice of Commitment to:

   Duke Energy – Distributed Energy Technologies
   Attn.: Wholesale Renewable Contract Manager
   DERContracts@duke-energy.com

Any subsequent notice that a QF may be required to provide to Company pursuant to this Notice of Commitment shall be delivered to the same address.

2. Seller Information. The name, address, and contact information for Seller is:

   Legal Name of Seller: _____

   Contact Person: _____ Telephone: _____

   Address: _____ Email: _____

3. Commitment to Sell. By execution and submittal of this binding legally enforceable obligation to sell and deliver the output of Seller's qualifying facility (the "Facility") for specified future delivery term of [2 years, 10 years] (the "Delivery Term"), Seller hereby commits to sell to the Company all of the electrical output of the Seller's Facility ("Notice of Commitment").

4. Certifications. By execution and submittal of this Notice of Commitment to sell the output of the Facility, Seller certifies as follows:

Eligibility for Schedule PP
Seller is a qualifying facility ("QF") with a maximum nameplate capacity of 1,000 kW and is eligible for the Company's Schedule PP.

Report of Proposed Construction (Rule R8-65)
Seller has filed a report of proposed construction for its ____ kW (net capacity ac) Facility with the North Carolina Utilities Commission ("NCUC") pursuant to NCUC Rule R8-65 ("Report of Proposed Construction") on [insert date] in Docket No. _____.

Application to Interconnect Generator to Company's System
Seller is requesting to become an Interconnection Customer of the Company, as that term is defined in the North Carolina Interconnection Procedures ("NCIP"), and has either submitted the NCIP Attachment 6 Interconnection Request Application Form for Certified Inverter-Based Generating Facilities No Larger Than 20 kW or has submitted the NCIP Attachment 2 Interconnection Request Application Form requesting a Maximum Generating Capacity less than or equal to 1 MW_{AC} and the Company has notified the Seller-Interconnection Customer that its Interconnection Request is complete and the following queue number has been assigned [insert queue number].

Other Seller QFs within 1-10 miles
Seller is providing the QF self-certification or other documentation describing the location and nameplate capacity for all other QFs within one mile of the project and within 10 miles of the project, which are owned or controlled by the same developer, as well as identifying the capacity of the other affiliated QFs as well as their proximity to the Seller.

Site Control
Seller is providing reasonable evidence of site control for the entire contracting term.

Commercial Viability and Financial Commitment
Seller commits to provide upon the Company's request (i) a list of all acquired and outstanding QF permits, including a description of the status and timeline for acquisition of any outstanding permits; and (ii) reasonable evidence that the Seller is financially committed to constructing the QF and selling and delivering capacity and energy to the Company for term of the proposed contracting term.

5. Effective Date. This Notice of Commitment shall take effect on its "Submittal Date" as hereinafter defined. "Submittal Date" means (a) the receipted date of deposit of this Notice of Commitment with the U.S. Postal Service for certified mail delivery to the Company, (b) the receipted date of deposit of this Notice of Commitment with a third-party courier (e.g., Federal Express, United Parcel Service) for trackable delivery to the Company,

(c) the receipted date of hand delivery of this Notice of Commitment to the Company at the address set forth in paragraph 1, above, or (d) the date on which an electronic copy of this Notice of Commitment is sent via email to the Company if such email is sent during regular business hours (9:00 a.m. to 5:00 p.m.) on a business day (Monday through Friday excluding federal and state holidays). Emails sent after regular business hours or on days that are not business days shall be deemed submitted on the next business day.

6. LEO Date. By execution and submittal of this Notice of Commitment, and assuming that the certifications provided herein are accurate, Seller acknowledges that the legally enforceable obligation date ("LEO Date") for the Facility will be established as of the Submittal Date. The LEO Date will be used to determine Seller's eligibility for the rates, terms and conditions of the Company's currently effective Schedule PP.

7. Termination. This Notice of Commitment shall automatically terminate and be of no further force and effect upon: (i) execution of a PPA between Seller and Company or, (ii) if such Seller does not execute a PPA, sixty (60) days after Company's delivery of an "executable" PPA to the QF by the Company, that contains all information necessary for execution and which the Company has requested that the QF execute and return; provided however, that Seller shall not be required to execute a PPA any earlier than 30 days after receiving a Interconnection Agreement from Company. Seller's failure to execute a PPA prior to expiration of the Notice of Commitment period or termination, as identified above, shall result in termination of the LEO and the QF shall only be offered an as-available rate for a two-year period following expiration of the Notice of Commitment. Thereafter, the QF may elect to submit a new Notice of Commitment Form to establish a new LEO.

The undersigned is duly authorized to execute this Notice of Commitment for the Seller:

_____
[Name]

_____
[Title]

_____
[Company]

_____
[Date]

NOTICE OF COMMITMENT TO SELL THE OUTPUT OF A QUALIFYING FACILITY GREATER THAN 1MW$_{AC}$ TO Duke Energy Carolinas, LLC or Duke Energy Progress, LLC

(North Carolina)

This notice of commitment form establishes a binding legally enforceable obligation ("LEO") on behalf of a qualifying facility ("QF") with a nameplate capacity greater than 1 MW$_{AC}$, further described as "Seller" below, committing to sell and deliver the output of a proposed QF generating facility to Duke Energy Carolinas, LLC or Duke Energy Progress, LLC (the "Company") as provided for in N.C. Gen. Stat. § 62-156(b) and 18 C.F.R. 292.304(d)(3).

The QF shall deliver, via email, its executed Notice of Commitment to:

Duke Energy – Distributed Energy Technologies
Attn.: Wholesale Renewable Contract Manager
DERContracts@duke-energy.com

Any subsequent notice that a QF is required to provide to Company pursuant to this Notice of Commitment shall be delivered to the same email address specified above.

This form may also be used by a QF proposing to materially alter its generating facility to integrate an energy storage system and committing to sell the output of the modified generating facility to the Company. Please note that a different form is available for QFs with a nameplate capacity of 1 MW$_{AC}$ or less seeking to commit to sell their output to the Company under the currently available standard offer power purchase agreement and terms and conditions.

Seller Information. The name, address, and contact information for Seller is:

Legal Name of Seller: _____
Contact Person: _____ Telephone: _____
Address: _____ Email: _____

By execution and submittal of this binding legally enforceable obligation to sell and deliver the output of the Facility for the Delivery Term (together will all completed Attachments hereto, the "Notice of Commitment"), Seller certifies as follows and is providing the following documentation to the Company:

1. Seller meets the requirements and has obtained certification from the Federal Energy Regulatory Commission ("FERC") to operate as a QF. Seller is providing documentation in Attachment A demonstrating the following:

   A. Seller has obtained self-certification of QF status filed with the FERC in Docket No. QF _____ (the "Facility"), or is otherwise providing documentation of having obtained QF status pursuant to the certification procedures set out in 18 C.F.R. 292.207; or,

B. If participating in the Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC Energy Storage System Retrofit Study Process, Seller is proposing to materially alter an existing QF to integrate an energy storage system to be fueled by the QF and has obtained certification of the modified QF in Docket No. QF _____ and has provided the new QF self-certification and written notice of the QF's commitment to construct the energy storage system to the North Carolina Utilities Commission ("Commission") in Docket No._____ where the QF's Certificate of Public Convenience and Necessity was originally issued.

Seller shall also provide in Attachment A documentation for all other QFs located within one mile of the project or within 10 miles of the project, which are owned or controlled by the same developer, as well as identifying the capacity of the other affiliated QFs as well as their proximity to the Seller.

2. Seller's QF is currently operating or is proposed to be constructed and to interconnect to the Company's system at the location described in Attachment B (the "Project Site"). If Seller is not directly interconnected to the Company's System, Seller shall be responsible for making all necessary transmission arrangements with its interconnected electric utility to deliver its power to the Company pursuant to 18 C.F.R. 292.303(d).

3. Seller shall also provide in Attachment B all material information required for the Company to provide Seller an executable power purchase agreement within 30 days of the date of this notice of commitment. If information provided by Seller is not sufficient, the Company shall provide the Seller written notice providing an opportunity to cure such failure by the close of business on the tenth (10) business day following the posted date of such notice. The failure to provide the information requested within this period shall result in the Notice of Commitment being terminated pursuant to Section 8.

4. Commitment to Sell Power for Specified Future Delivery Term. Seller represents and hereby commits to commence delivery of its full electrical output to the Company for specified future delivery term of [2 years, 5 years] (the "Delivery Term") as follows: (a) where Seller's QF is currently interconnected to the Company's System, within 365 days of the Submittal Date (as defined below), and (b) where the Seller is a new Interconnection Customer of the Company (or where a new interconnection request is submitted for an interconnected QF Seller which includes a new in-service date), by a date that is no later than 90 days after the in-service date specified in the Seller's interconnection request or in the interconnection agreement between the Seller and the Company. Provided that Seller is making good faith efforts to advance the project as contemplated in the interconnection request or interconnection agreement and has provided reasonable assurances of such in writing to the Company, Seller shall be given day-for-day extensions on its in-service date for delays to the in-service date which are not caused by or attributable to Seller, or any party under its direction or control, and which do not result from the fault, negligence, act or inaction of Seller or any party under its direction or control.. By execution of this Form, Seller represents that the QF is commercially viable and financially committed to delivering its full electrical output to the Company for the specified Delivery Term and the Company can rely upon the QF's energy and capacity during the future Delivery Term for resource planning.

5. The documents attached hereto as Attachment C are provided to demonstrate Seller's commercial viability and financial commitment to sell and deliver power as of the Submittal Date for the future Delivery Term.

6. The mutually-binding legally enforceable obligation established by this Notice of Commitment shall take effect on its "Submittal Date" as hereinafter defined. "Submittal Date" means (a) the receipted date of deposit of this Notice of Commitment with the U.S. Postal Service for certified mail delivery to the Company, (b) the receipted date of deposit of this Notice of Commitment with a third-party courier (e.g., Federal Express, United Parcel Service) for trackable delivery to the Company, (c) the receipted date of hand delivery of this Notice of Commitment to the Company at the address set forth in paragraph 1, above, or (d) the date on which an electronic copy of this Notice of Commitment is sent via email to the Company if such email is sent during regular business hours (9:00 a.m. to 5:00 p.m.) on a business day (Monday through Friday excluding federal and state holidays). Emails sent after regular business hours or on days that are not business days shall be deemed submitted on the next business day.

7. LEO Date. By execution and submittal of this Notice of Commitment, Seller acknowledges that the date of the QF's binding legally enforceable obligation date to sell the Facility's full capacity and energy output to the Company ("LEO Date") will be the Submittal Date. Rates for purchases from the Seller's QF Facility will be based on the Company's avoided costs as of the LEO Date, calculated using data current as of the LEO Date.

8. Termination. This Notice of Commitment shall automatically terminate and be of no further force and effect in each of the following circumstances:

   a. Upon execution of a PPA between Seller and Company.

   b. If Seller terminates its Interconnection Request or is otherwise withdrawn from the interconnection queue.

   c. If Seller does not execute a PPA within 90 days after the Company delivers an executable PPA to the Seller that contains all information necessary for execution and which the Company has requested the Seller to execute and return; provided however, that Seller shall not be required to execute a PPA any earlier than 30 days after receiving a Facilities Study Agreement from Company. Notwithstanding the foregoing, if the PPA proposed by the Company becomes the subject of arbitration or complaint proceeding, the deadline for execution of the PPA shall be tolled upon the filing of the pleading commencing such proceeding and thereafter the deadline for execution of the PPA will be as directed by the Commission.

   d. If the Seller ceases to have control of the Project Site; ceases to be certified as a QF with FERC or ceases to be certificated by the Commission, if required, and any such deficiency has not been cured within ten (10) business days of written notice by the Company.

e. Seller's failure to execute a PPA prior to expiration of the Notice of Commitment period, as identified in subsection 8.(c) above, shall result in termination of the LEO and the QF shall only be offered an as-available rate for a two-year period following expiration of the Notice of Commitment. Thereafter, the QF may elect to submit a new Notice of Commitment Form to establish a new LEO.

I swear or affirm, in my capacity as a duly-appointed officer of the Seller, that I have personal knowledge of the facts and information presented in this Notice of Commitment, I am competent to testify to those facts, and I have authority to make this binding legally enforceable obligation to the Company on behalf of Seller. I further swear or affirm that all of the statements and representations made in this Notice of Commitment are true and correct as of the date hereof. I further swear or affirm that Seller will comply will all requirements of this Notice of Commitment.

_____

[Name]

_____

[Title]

_____

[Company]

_____

[Date]

Attachment A to Notice of Commitment Form

[*Seller Information, QF Certification, and Affiliated QFs*]

1. Seller Information. The name, address, and contact information for Seller is:

   Name: _____ Telephone: _____

   Address: _____ Email: _____

2. Seller is providing its QF self-certification or other documentation of having obtained QF status pursuant to the certification procedures set out in 18 C.F.R. 292.207.

3. Seller is providing the QF self-certification or other documentation for all other QFs within one mile of the project and within 10 miles of the project, which are owned or controlled by the same developer, as well as identifying the capacity of the other affiliated QFs as well as their proximity to the Seller. Seller shall also provide a description of the organizational structure and chart of upstream developer, if applicable, and describe the affiliate relationship between Seller and other QFs within 10 miles of the project.

Attachment B to Notice of Commitment Form

[*Information Required to Complete PPA*]

The Company agrees to negotiate diligently and in good faith with Seller towards an executable power purchase agreement ("PPA"), and commits to provide Seller an executable PPA within 30 days of receipt of all project information reasonably required for the development of the PPA, including, but not limited to:

a. Facility Name and address of Project Site;
b. Description of Facility (include number, manufacturer and model of Facility generating units, and layout). Also, describe if storage is included;
c. Generation technology and other related technology applicable to the Facility;
d. Fuel type (s) and source (s);
e. Plans to obtain, or actual fuel and transportation agreements, if applicable;
f. Maximum design capacity AC and DC (MW), station service requirements, and net amount of power (kWh) to be delivered to the Company's electric system by the QF;
g. Site Map (include location and layout of the Facility, equipment, and other site details for the Project Site);
h. Delivery Point Diagram (include Delivery Point, metering, Facility substation)
i. Where QF is or will be interconnected to an electrical system other than the Company's, plans to obtain, or actual electricity transmission agreements with the interconnected system to deliver power to Company;
j. Quantity, firmness, and timing of daily and monthly power deliveries, including schedule of estimated Qualifying Facility electric output, in an 8,760-hour electronic spreadsheet format;
k. Ability, if any, of QF to respond to dispatch orders from the Company and, if applicable, whether solar QF plans to operate facility as a Controlled Solar Generator*;
l. Anticipated commencement date for delivery of electric output;
m. List of acquired and outstanding QF permits, including a description of the status and timeline for acquisition of any outstanding permits;
n. Interconnection Agreement status and estimated date for execution of Interconnection Agreement;
o. Estimated date for Financing Commitment*,
p. Estimated date for Final System Design* under Interconnection Agreement
q. Estimated date for Commencement Readiness Requirements* and
r. Proposed contracting term for the sale of electric output to the Company.

*Capitalized terms unless defined herein shall have the same meaning specified in the Companies' negotiated form of power purchase agreement for large QFs above 1MW accessible on [Duke website], unless otherwise specified herein.

Attachment C to Notice of Commitment Form

[*Information Required to Demonstrate Commercial Viability and Financial Commitment*]

Seller provides the following information in order to demonstrate commercial viability and financial commitment to sell and deliver power over the specified Delivery Term

1. Certificate of Public Convenience and Necessity; or Report of Proposed Construction.

   a. ____Seller has received a certificate of public convenience and necessity ("CPCN") for the construction of its _____ kW (net capacity$_{ac}$) Facility from the NCUC pursuant to North Carolina General Statute § 62-110.1 and NCUC Rule R8-64, which CPCN was granted by NCUC on [insert date] in Docket No. ____.

   b. _____ Seller is exempt from the CPCN requirements pursuant to North Carolina General Statute § 62-110.1(g) and has filed a report of proposed construction for its ____ kW (net capacity$_{ac}$) Facility with the NCUC pursuant to NCUC Rule R8-65 ("Report of Proposed Construction") on [insert date] in Docket No. ___.

   c. _____ Seller is proposing to co-locate an _____ kW (net capacity$_{ac}$) energy storage system at a generating facility that previously obtained a CPCN for the construction of a _____ kW (net capacity$_{ac}$) QF generating facility in Docket No. ____ and the QF has provided written notice to the NCUC of the planned energy storage addition to the QF.

2. Interconnection – Reasonable evidence that Seller is interconnected to the Company's system, has made transmission arrangements to deliver its power to the Company's system, or has requested to become an Interconnection Customer of the Company, as that term is defined in the North Carolina Interconnection Procedures ("NCIP"), and the Seller has met all applicable requirements to commence the interconnection study process under the Definitive Interconnection Study Process, including without limitation providing the Section 4.4.1 initial security requirement and has executed a Definitive Interconnection System Impact Study Agreement pursuant to NCIP Section 4.4.5.

3. Site Control – Reasonable evidence of site control for the entire contracting term

4. Project Development – Please provide a current status update on the development of the Facility, including anticipated timelines for:
   a. completion of key QF milestones specified in Attachment B,
   b. proof of payment of applicable permitting and other application fees,
   c. the procurement of any long-lead time materials,
   d. execution of construction agreements or EPC contracts to construct the Facility,
   e. execution of third-party Transmission Agreements and other agreements or events necessary to achieve commercial operation of the facility within 365 days of the Submittal Date.