STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

In the Matter of Staff's Review of Commission Rules 4 CSR 240-20.060 (Cogeneration) 4 CSR 240-20.3.155 (Filing Requirements for Electric Utility Cogeneration Tariff Filings) and 4 CSR 240-20.065 (Net Metering)	)))))	**File No. EW-2018-0078**

JOINT COMMENTS OF CYPRESS CREEK RENEWABLES AND RENEW MISSOURI

COMES NOW Cypress Creek Renewables ("CCR") and Renew Missouri Advocates ("Renew Missouri") by and through their undersigned counsel, and hereby submits these comments pursuant to the Commission's May 22, 2018 *Order Inviting Responses to Draft Rules* related to cogeneration and small power producers. With these comments, CCR and Renew Missouri aim to both propose specific changes to existing rules and to encourage the commencement of a formal rulemaking to update the Commission's Cogeneration rules. CCR and Renew Missouri thank the Commission for the opportunity to provide information about the topic of Cogeneration (4 CSR 240-20.060) and Requirements for Electric Utility Cogeneration Tariff Filings (4 CSR 240-20.155).

These comments were authored by Sam Kliewer of CCR with input from Renew Missouri. These comments are regarding the Commission's Cogeneration rule (4 CSR 240-20.060) and implementation of the Federal PURPA law; they do not focus on the Commission's Net Metering rule at 4 CSR 240-20.065. Communications and correspondence should be directed to the following individuals:

Sam Kliewer
Policy Manager
Cypress Creek Renewables
130 Roberts Ave.
Asheville, NC 28801
Sam.Kliewer@ccrenew.com
(828) 233-8159

Andrew Linhares
Regional Director & Senior Counsel
Renew Missouri Advocates
3115 S. Grand Ave., Suite 600
St. Louis, MO 63118
Andrew@renewmo.org
(314) 471-9973

I. General Comments

As a leading developer of utility-scale solar and utility-scale solar + storage generation, CCR has seen first-hand how solar development can benefit utility ratepayers, keep rates low, boost economic growth, and foster grid resiliency. In electric utility monopoly states such as Missouri, there is only one mechanism for ensuring that independent power producers have access to the market, and that mechanism is the Public Utilities Regulatory Policy Act of 1978 ("PURPA"). The statute is enjoying fresh relevance across the country due to technological innovation and the increasingly low cost of solar and energy storage resources. CCR and Renew Missouri applaud the Commission's continued interest in and efforts to reform Cogeneration rules so that Missouri can become PURPA compliant. It is CCR and Renew Missouri's hope that this proceeding will transition from an informational proceeding to a formal rulemaking. The ultimate success of PURPA implementation will be a function of the decisions the Commission makes in this proceeding, and any subsequent formal rulemaking proceedings.

The timing of this review is fortunate, as the investor-owned utilities in Missouri have demonstrated capacity needs. For example, Ameren's plans to expand solar and wind capacity would be enhanced by considering Qualifying Facility ("QF") development as part of the expansion. Empire Electric's recent plan to retire a coal plant while adding 800 MW of wind has been revised so that the coal plant can stay online and the wind addition has been revised down to 600 MW. Solar QF development could help fill this capacity shortfall and the addition of energy storage can help balance generation with demand. In addition to solar QF development, the Commission would be wise to explore the costs and benefits of hybrid solar + storage and stand-alone storage assets.

CCR and Renew Missouri applaud the provision in Senate Bill 564 that calls for $22M of total investment in utility scale solar by the investor owned utilities of Missouri. We believe the solar energy sourced via PURPA PPA's will set a competitive cost benchmark for the Commission and the utilities when considering the merits of specific investments. The fruits of these investments will ultimately be a small portion of the solar capacity installed in Missouri, but the message it sends is a powerful one. Missouri is looking forward to a new energy future and the solar development community is eager to work with the Commission and Missouri's utilities to develop the solar and energy storage sectors of Missouri's energy economy.

Before moving into specific comments on the proposed rule changes, CCR and Renew Missouri would like to address an administrative point. In Docket EW-2017-0245 the Commission accepted a series of Staff recommendations, which included an order for the utilities to study the impact of raising the standard offer to 1,000 kilowatts ("KW"), 2,500 KW, and 5,000 KW.[1] The proposed changes to Cogeneration rules 4 CSR 240-20.060, specifically sections (4) and (5), seem to assume that the standard offer will be capped at 1,000 KW. Based on our experience, a standard offer cap of 5,000 KW is most likely to stimulate solar development, but believe any change to the current cap should be informed by the standard offer size cap study that is underway.

[1] Commission's Response to Staff Report Regarding Distributed Energy Resources. File No. EW-2017-0245. April 18th, 2018. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=EW-2017-0245&attach_id=2018017329

II. Comments Regarding Proposed Rule Changes, 4 CSR 240-20.060

The comments in this section include specific recommendations and suggested language that we believe will improve the process of PUPRA implementation in Missouri in a way that is consistent with current Federal law. Our comments address the following aspirations:

- *Part a*: Clarifying what obligation utilities have for various QF system sizes, especially for standard offer contracts and for contracts above the standard offer level;
- *Part b*: Standardizing the length of contracts between QFs and utilities to provide for long-term contracts so QFs can develop and finance projects;
- *Part c*: Establishing the method by which a utility's "Avoided Costs" are calculated;
- *Part d*: Specifying when a "Legally Enforceable Obligation" is established between an electric utility and a QF;
- *Part e*: Ensuring that the "Filing Requirements" section includes the opportunities for input from regulators and interested parties;
- *Part f*: Recommending various changes to the "Definitions" section of the rule.
- *Part g*: Proposing several other language revisions for the sake of consistency and clarity in the rule.

a. System Size Limits for QFs.

PURPA requires each electric utility to have a standard rate for purchase for QF with a capacity of 100 KW or less. The current rule allows the option to have a standard rate for QFs larger than 100 KW. We believe the rule needs a larger size limitation for QFs that qualify for the standard offer program. Historic utility-scale solar development at or below 100 KW is extremely limited because 100 KW does not afford developers sufficient economies of scale to allow for financially viable projects. Additionally, capping the standard offer program to projects

100 KW and below limits the amount of new solar generation in Missouri. States that have successfully implemented PURPA typically have standard offers above 100 KW. For example, North Carolina's 5,000 KW standard offer program facilitated billions of dollars of solar development in the state.[2]

In addition, PURPA requires that utilities also purchase the output of QFs above the standard offer pursuant to long-term, fixed price long-term contracts, unless the QF has non-discriminatory access to wholesale markets.[3] Therefore Missouri's Cogeneration rule should also require that utilities purchase the output of QF up to 20,000 KW in size pursuant to long-term fixed price contracts.

The Commission is wisely anticipating the benefits of QF development as evidenced by the proposed addition of Section (5)(G)(5), and we strongly believe that QF development between the standard offer cap up to 20,000 KW (e.g. 5,000 KW to 20,000 KW) is necessary to optimize benefits to ratepayers and to achieving the scale that would allow the aggregate output of dispersed small systems to enhance the reliability of the larger electricity system. We are sensitive to administrative inefficiencies and given the Commission's demonstrated interest in encouraging PURPA development we propose that the Commission eliminate the standard offer for QFs less than 100 KW and make the following changes to Section (4)(A-B):

(A) Each electric utility shall put into effect commission-approved standard rates and contract terms and conditions for purchases from qualifying facilities with a design capacity ~~1.) Of one hundred (100) kilowatts~~ **of five thousand (5,000) kilowatts** or less~~; or~~. Such standard rates shall include both as-available and time-of-obligation options for avoided costs.

~~1.) Over one hundred (100) kilowatts to one thousand (1,000) kilowatts.~~

(B) Each electric utility shall put into effect commission-approved avoided cost rates and contract terms and conditions for purchases from qualifying facilities of more than five thousand (5,000) kilowatts and up to twenty thousand (20,000)

[2] The North Carolina General Assembly recently reduced the standard offer program to 1 MW given that almost 3 GW of solar had come on line in the state.

[3] Such a determination has not been made with respect to QFs less than or equal to 20 MW in size in Missouri.

kilowatts. These rates shall include both as-available and time-of-obligation options for avoided costs. These rates shall be calculated in accordance with the methods used to calculate the standard offer rates pursuant to sections (4), (5), and (11). However, these rates shall be updated bi-annually and published per the guidelines set forth in Section (11) Filing Requirements.

(C) Each electric utility shall put into effect commission approved standard contract terms and conditions for purchases from qualifying facilities. Such standard terms and conditions are subject to commission approval. Such standard terms and conditions may vary for qualifying facilities above the standard offer to 20,000 kilowatts.

Section (5)(C) would need to be changed accordingly to match Section (4):

(D) Standard Rates for Purchases

1. There shall be put into effect (with respect to each electric utility) standard rates for purchases from qualifying facilities with a design capacity of ~~one hundred (100) kilowatts~~ **five thousand (5,000) kilowatts** or less.
2. There ~~may~~ shall be put into effect ~~standard~~ rates established pursuant to Section 4b. for purchases from qualifying facilities with a design capacity of more than ~~one hundred (100) kilowatts~~ **five thousand (5,000) kilowatts but less than twenty thousand (20,000) kilowatts.**
3. **Such rates shall include the option for qualifying facilities to sell energy at the avoided cost on either an as-available or time-of-obligation basis.**

b. Standard Contract Term Length.

Simply put, the future of PURPA development in Missouri will hinge on the whether the Commission adopts specific requirements regarding contract term lengths. The otherwise commendable proposed rule changes lack the language to clearly define the term of the standard contract. Standard contract term lengths are paramount to any successful PURPA market. From CCR's Joint Comments in this proceeding:

> "Fundamentally, all energy assets are financed through long term capital investments that are recouped through relatively fixed revenue streams over many years. This is true whether or not an energy asset is owned by a utility or an independent power producer ("IPP"). For utilities, the recouping of costs over many years comes in the form of Commission approved cost recovery. For IPPs, recouping costs over many years comes in the form of a power purchase agreements. Regardless of ownership structure of a generating asset, recouping costs over a longer period of time means a lower levelized cost of energy paid by ratepayers. In addition, PURPA requires that utilities offer power purchase agreements to that are of sufficient duration "to allow QFs reasonable opportunities to attract capital from potential investors."[5] FERC has recognized that

without a long enough contract term, IPPs cannot finance facilities with private capital. Additionally, an IPP asset is much more likely to provide competitive power relative to a rate-based, utility owned asset with a contract length that is comparable to Commission approved amortization timeframes for IOU assets.

"Thus, to level the playing field between utilities and independent power producers, and to comply with the requirements of PURPA, we propose that the rule include a minimum or standard contract term length. Specifically, we propose a standard contract term of 20 years."[4]

A common refrain from utilities is that long-term contracts are subject to the risk of forecast error, which is ironic because investment in investor owned generation is also subject to the same forecast risk. Indeed, no large-scale utility investments get made by any party without certainty regarding project revenues, which necessarily subjects ratepayers to some price risk in exchange for certainty of generation supply. But in the case of investor owned utilities the ratepayer also carries the risk of construction cost overruns, operation and maintenance expenses, and, with non-renewable resources, fuel price volatility, whereas the IPP (as a private company), and its financiers, developing a QF wear all these risks. CCR proposes the following language be inserted after section (4)(C):

(D) Standard Contract Term Length for Purchases.

1. There shall be put into effect (with respect to each utility) a standard contract term length of twenty (20) years for purchases from qualifying facilities taking service under the Standard Offer Contract.

2. There shall be put into effect a standard contract term length of twenty (20) years from qualifying facilities with a design capacity greater than five thousand (5,000) kilowatts and up to twenty thousand (20,000) kilowatts.

c. Avoided Cost Methodology.

There is no more important and complex aspect of PURPA implementation than the calculation of the avoided costs of energy and capacity. CCR and Renew Missouri do not

[4] Joint Comments of Renew Missouri and CCR. File No. EW-2018-0078. Pg. 8. October 18th, 2017. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=EW-2018-0078&attach_id=2018005200

advocate for one avoided cost methodology at the expense of another but does believe there should be a transparent, standard method for all utilities. This consistency would greatly improve the management of the administrative effort of avoided cost proceeding and would facilitate both the ability of third parties to participate effectively in such proceedings and the Commission's ability to provide effective oversight and decision making. CCR and Renew Missouri offer these comments on each of the proposed methodologies:

1.) Proxy Unit: In CCR's experience this is the simplest and easiest to understand approach. The avoided costs of energy and capacity are calculated separately. Regarding the avoided cost of capacity, stakeholders will need to reach agreement on the procedure for selecting proxy unit. The derivation of a capacity factor to account for the intermittency of a solar generator should objectively consider how a generator performs over hours of peak system load and peak system stress. IPP input should be considered if a capacity factor is used to adjust capacity credits to account for intermittency. The amortization period of the proxy unit, discount rate, and inflation rate will all affect the end-result and should be addressed as part of any workshop process. Regarding the avoided cost of energy, the most important piece is the forecast of natural gas. Stakeholders will need to reach consensus as to the source, vintage, and the procedures for updating the forecasts. It is best practice for natural gas forecasts to be consistent between avoided cost calculations and IRP scenarios.

2.) IRP Based Avoided Cost: More detail is needed to fully understand this method but it appears to be similar to the Differential Revenue Requirement ("DRR") method.[5] CCR's experience is this can be an accurate method for determining avoided cost. On

[5] For description of the DRR method see Reviving PURPA's Purpose: Limits of State Avoided Cost Ratemaking Methods by Carolyn Elefant. October 24th, 2011. http://www.recycled-energy.com/images/uploads/Reviving-PURPA.pdf

the other hand, the DRR method tends to operate as a "black box" and has been used to tilt the scales of balance in favor of utilities at the expense of QF developers. Language in the new rules should addresses transparency in sharing assumptions if this method is selected. Ideally, the rule would require the utilities to make reasonable accommodations to make the software platform available for QF developers and their retained experts to model their own scenarios at no cost. A robust DRR simulation depends on a robust IRP to set the "base case". A "changed case" is then created by adding in future QF development. The changed case should be based on reasonable expectations of future QF development so that the estimate of future solar penetration is not grossly under or over stated in the model.

3.) Market Based Pricing: Qualifying facilities up to 20,000 KW in size are presumed not to have access to competitive markets. These rates should only be used for renewable generators above 20,000 KW when a bi-lateral agreement cannot be reached by a developer and utility. More broadly, CCR does not believe these numbers represent a non-discriminatory avoided cost.

Finally, we recommend that the Commission and Staff schedule a workshop, meeting or other process in which all regulators, utilities, and interested parties can discuss these various approaches to calculating, establishing, and enforcing avoided costs. In addition to the method of calculating avoided costs, it is essential to have a clear process and timeline by which avoided costs are established each year (as provided in section 11). We feel that the rule would benefit from having such discussions, either in-person or by phone.

d. Legally Enforceable Obligation

A key provision of PURPA that is referenced in the draft rule changes but not defined is the legally enforceable obligation ("LEO"). The LEO is important for many reasons, but in particular, two stand out. First, the LEO establishes the commitment from the QF to sell its energy and capacity to the utility and the obligation on the electric utilities to purchase energy and capacity from a QF . Second, the date a LEO is established determines the avoided cost rates paid to a QF for time-of-obligation rates. As CCR noted in its original joint filing:

> "A QF establishes a LEO when it unequivocally commits to sell its output to the utility. State public service commissions have the responsibility to define what a QF must do to demonstrate such a commitment, but this Commission has not previously articulated a test for LEO formation. It is a common observation that utilities have attempted to avoid entering into LEOs with qualifying facilities developers in numerous circumstances."[6]

In considering how to define the LEO, it is imperative that the Commission's rules provide clear guidance on when and how an LEO is established. Specifically, it is important that it be through the action of a QF that an LEO is established. We have proposed language below to address this point. The objective of the proposed language is to create a mechanism that provides that when the QF executes the form QF PPA and returns to the utility, it has "unequivocally committed itself" to sell energy and capacity to the utility and in turn, the LEO is established and the utility is obligated to purchase such energy and capacity.

We suggest that the Commission adopt a LEO test and provide that a QF establishes a LEO as follows:

> **(12) Legally Enforceable Obligations**
> **(A) A qualifying facility may establish a legally enforceable obligation by one of the following methods:**

[6] Joint Comments of Renew Missouri and CCR. File No. EW-2018-0078. Pg. 10. October 18th, 2017. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=EW-2018-0078&attach_id=2018005200

1. A qualifying facility may tender an executed copy of a commission-approved standard offer contract or form power purchase agreement pursuant to a commission-approved standard rate for purchase, after which the electric utility shall countersign within 30 days to establish a legally enforceable obligation. If the electric utility fails to countersign within 30 days, a legally enforceable obligation will be established for the date on which the qualifying facility tendered the executed standard offer contract or form power purchase agreement.

2. A qualifying facility may tender a modified form power purchase agreement pursuant to a commission-approved standard rate for purchase, after which the electric utility shall respond to the qualifying facility within 30 days. If after 60 days the parties have failed to execute a power purchase agreement, the qualifying facility may submit a claim to the commission for resolution.

e. Filing Requirements

CCR and Renew Missouri applaud the Commission's inclusion of a set of rules that clearly dictates an appropriate level of avoided cost detail must be made available to the public. We believe that these robust filing requirements should be paired with a procedure for public review in a docket before the commission as we stated in our initial joint comments:

> "We also recommend that staff and the Commission have adequate time to review avoided costs and resulting standard offer tariffs before approval. We believe that the Commission currently has only 30 days to review and approve avoided cost filings. This is far too short of a time period for adequate review of utility cost structures necessary to arrive at an avoided cost. Nearly every state with a non-negligible number of QFs has a multi-month biennial review period of avoided cost methodology and inputs, and also an annual review of key avoided cost model inputs to keep rates fresh. Renew Missouri/CCR suggest that the Commission adopt a procedural timeline for review of avoided costs consistent with other states that have seen significant QF development."[7]

Avoided cost rate disputes are more likely to occur without a thorough public review of avoided cost filings. Furthermore, CCR and Renew Missouri continue to be concerned that a thirty-day review period is not sufficient especially considering multiple utilities will be making simultaneous filings. The interests of the QF developer community need to be balanced with the desire for administrative efficiency. Independent developers should have a voice in reviewing the

[7] Joint Comments of Renew Missouri and CCR. File No. EW-2018-0078. Pg. 5. October 18th, 2017. https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=EW-2018-0078&attach_id=2018005200

rates that will dictate their ability to invest in the state of Missouri. We suggest the following addition:

(11) Filings Requirements

(A) On or before January 15 of every odd-numbered year, unless otherwise ordered by the commission, all regulated electric utilities shall file, in accordance with 4 CSR-2.065 (4), tariffs which contain the standard contracts as described in section (4) of this rule and the standardized rates for sales and purchase described in section (5) and section (6) of this rule. The biennial filings will consider the factors affecting rates for purchases as described in section (5)(G) and be accompanied by data described in section (11)(B) and the verification described in (11)(C) of this rule.

(B) Within thirty (30) days of the January 15 avoided cost filings required by subdivision (A) of subsection (11) of this rule, the commission shall open a file allowing the staff for the commission, the office of public counsel, and other interested parties to participate fully in the proceeding, including through the presentation of testimony and other evidence and the cross-examination of utility witnesses. Based on the record in such proceeding, the commission shall issue an order directing each regulated electric utility to adopt such standard contracts and standardized rates for sales and purchase that the commission determined to be just and reasonable.

f. Definitions

Below, we have proposed several modifications and additions to the Definitions section of the draft rule. We recommend adding definitions for "As-delivered rates," "Capacity," "Electric utility," "Time-of-obligation rates;" we also recommend against deleting the definitions for "Purchase" and "Qualifying facility," and deleting the word "capacity from the definition of "Capacity cost.

(1) Definitions. Terms defined in the Public Utility Regulatory Policies Act of 1978 (PURPA) shall have the same meaning for purposes of this rule as they have under PURPA, unless further defined in this rule.

(A) As-Delivered Rates means rates based on the Avoided Costs for energy and capacity of the Electric Utility that are determined at the time the Qualifying Facility delivers electricity to the Electric Utility.

~~(A)~~ **(B)** Avoided costs means the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, that utility would generate itself or purchase from another source.

(C) Capacity means the capability to produce electrical energy.

~~(C)~~ **(D)** Capacity Costs means the ~~capital~~ costs associated with providing the capability to deliver energy.

(D) Electric Utility means any electrical corporation as defined by section 386.020, RSMo.

~~(B)~~ **(E)** Fuel costs, or energy costs, means the variable costs associated with the production of electric energy and represent the cost of fuel and operating and maintenance expenses.

(F) Purchase means the purchase of electric energy or capacity or both from a qualifying facility by an electric utility.

(G) Qualifying facility means a cogeneration facility or a small power production facility which is a qualifying facility under Subpart B of Part 292 of the Federal Energy Regulatory Commission's (FERC) regulations.

(H) Time-of-Obligation rates means rates based on the avoided costs for energy and capacity of the Electric Utility that are determined: (1) for a Qualifying Facility that is already constructed, at the time a Qualifying Facility commits to selling its output to the Electric Utility; or (2) for a Qualifying Facility not already constructed, at the time a Qualifying Facility establishes a Legally Enforceable Obligation.

g. Other Proposed Revisions

The following are additional recommendations to the language in the draft rule provided by Staff. These recommendations do not necessarily fall into the priority areas in the above Parts a through f, but should be considered nonetheless.

1. Strike subdivision 5. in subsection (5)(B), as it is inconsistent with Federal PURPA regulations. Utilities should develop rates for "as-delivered" and "time-of-obligation" options, pursuant to 18 CFR 292.304(d):

~~5. In the case in which the rates for purchases are based upon estimates of avoided costs over the specific term of the contract or other legally enforceable obligation, the rates for the purchases do not violate this paragraph if the rates for the purchases differ from avoided costs at the time of delivery.~~

2. Add subdivision 3. to subsection (11)(C) for projects greater than 1,000 KW

3. For systems over 1,000 kW and under 20,000 kW: …

3. Modify Subsection (11)(D) to replace the term "estimating" with "establishing":

(D) In ~~estimating~~ **establishing** the avoided cost on the electric utility…

* * *

CCR and Renew Missouri appreciate the opportunity to submit these comments and look forward to working with the Commission and all stakeholders to revise Missouri's Cogeneration rules to ensure Missouri's compliance with PURPA.

Respectfully Submitted,

/s/ Andrew Linhares
Andrew Linhares, MO Bar ID # 63973
Renew Missouri Advocates
3115 South Grand Ave, Suite 600
St. Louis, MO 63118
Andrew@renewmo.org
(314) 471-9973

ATTORNEY FOR CYPRESS CREEK RENEWABLES AND RENEW MISSOURI ADVOCATES