

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI**

In the Matter of a Working Case to Explore                    )  
Emerging Issues in Utility Regulation                        )                    **File No. EW-2017-0245**

**RENEW MISSOURI’S COMMENTS AND INFORMATION FOR STAFF**

Renew Missouri thanks the Commission for opening this proceeding and for the opportunity to share our resources and expertise. Renew Missouri has an interest in each one of the issues raised by the Commission, however, Renew Missouri has chosen to submit information on only a few off the chosen issues, preferring depth over breadth. Renew Missouri presents the following comments to supplement the attached studies and documents.

The Commission’s mission includes ensuring that “Missourians receive safe and reliable utility services at just, reasonable and affordable rates.” Many of the programs proposed below fit within MEEIA’s goal of achieving all cost-effective demand side savings.<sup>1</sup>

**1. The Regulation of Solar Energy**

A. PURPA, Cogeneration, and Avoided Costs

The Commission has a crucial role to play in implementing and enforcing PURPA in Missouri. While PURPA was passed by Congress, each individual state is charged with deciding key issues, such as: how to calculate avoided costs; the minimum and maximum capacity thresholds, and the length of standard contracts. Currently, the Commission implements PURPA through its rule at 4 CSR 240-20.060. However, the Commission’s rule lacks several key components that are holding Missouri back from unleashing the power of the private sector. Renew Missouri respectfully requests that the Commission open a rulemaking docket to revise its Cogeneration rule at 4 CSR 240-20.060.

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<sup>1</sup> 393.1075(4) RSMo.

The Public Utilities Regulatory Policy Act (PURPA) was passed in 1978 partially in response to the oil embargo of the early 70s. The primary aim of PURPA was to conserve energy, promote efficiency, and diversify the American energy sector by reducing reliance on foreign energy sources. To reach this aim, PURPA introduced a requirement that utilities purchase energy from “Qualifying Facilities” (“QFs”) at the utility’s avoided cost, or the cost for the utility to produce the power. Through this requirement, PURPA provided market access for independent power producers, who can often produce power much more cheaply than utilities while diversifying the grid’s supply of energy. While PURPA has been in place for decades, entrepreneurs in the energy sector are now finally finding innovative ways to produce significant energy cheaply and reliably and sell it at avoided cost rates all over the country.

North Carolina has used PURPA to catapult the state to 2<sup>nd</sup> in the nation in installed utility-scale solar capacity owned by independent power producers, as of 2015.<sup>2</sup> This strategic approach to PURPA implementation in North Carolina has led to tremendous economic activity in the solar sector, despite other states having far better solar resources and more developed industries. According to the EIA, one of the keys to success in North Carolina has been the 15-year fixed avoided cost contracts, which the NC Utilities Commission requires. Another attractive advantage in North Carolina is the 5 MW capacity limit, which allows independent power producers to reach better economies of scale.

Missouri has a comparable solar resource and population profile to North Carolina, but lags woefully behind in terms of solar. Compared to North Carolina’s 3,000+ MW of installed solar, Missouri had a mere 150 MW by the end of 2016.<sup>3</sup> Compared to the over \$5 billion

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<sup>2</sup> Energy Information Administration, “North Carolina has more PURPA-qualifying solar facilities than any other state.” August 23, 2016. <https://www.eia.gov/todayinenergy/detail.php?id=27632>

<sup>3</sup> SEIA, State Solar Policy. <http://www.seia.org/state-solar-policy/north-carolina>

invested in solar in North Carolina, Missouri has only invested about \$435 million.<sup>4</sup> Perhaps the greatest reason for this disparity is North Carolina's approach to PURPA implementation. Unlike North Carolina's 15-year fixed avoided cost requirement, the Missouri Commission's rule at 4 CSR 240-20.060 provides no fixed term and thus no long-term certainty for independent power producers. Compared to the 5 MW size limit in North Carolina, Missouri's rule only requires standard rate for purchase from QFs of 100 kW or less. Changes in these provisions would immediately give the private sector the certainty and incentive it needs to innovate and expand in Missouri. These changes – now entirely in the hands of the Commission – are not radical or revolutionary, yet they would lead to thousands of jobs and billions of dollars of investment in Missouri.

The Commission should address these issues in a rulemaking docket to revise its rule at 4 CSR 240-20.060. In addition to the issues of the size limit and fixed avoided cost term length, the Commission should require utilities to submit new cogeneration tariffs. The Commission should approve each investor-owned electric utility's standard PURPA contract as part of their tariffs. We also suggest adding a requirement that utilities respond to PURPA contract requests within a specified time, such as 60 days.

Finally, the issue of avoided costs will be a central issue in such a rulemaking docket. Therefore, the Commission should take special care in soliciting input from stakeholders and gathering data from other states on how avoided costs should be calculated.<sup>5</sup> Because of the tremendous up front cost of developing utility-scale renewable energy projects, developers generally must seek funding and have a guaranteed price and term from the utility. Avoided cost

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<sup>4</sup> Id.

<sup>5</sup> For more information, see Pacificorp, Schedule 37 from Oregon (<https://www.pacificpower.net/env/nmcg/qf.html>), as well as Portland General Electric Schedule 201 (<https://www.portlandgeneral.com/business/power-choices-pricing/renewable-power/install-solar-wind-more/sell-power-to-pge>)

calculations should be carefully crafted to reflect the actual cost to the utility of producing an equivalent amount of power. Investor-owned utilities have an incentive to claim as low an avoided cost as possible in order to reduce the amount spent on PURPA contracts. As such, objective third-party analysis should be used in creating an avoided cost methodology. Finally, utilities should be required to make their avoided cost projections public, in addition to filing them with the Commission.

#### B. Net Metering and the Value of Solar

The Commission should make every possible effort to support Net Metering in Missouri. Net Metered solar. Missouri has one of the weakest net metering policies in the nation, and yet it has still resulted in hundreds of millions of dollars in investment, mostly from customer investing their own money. Distributed generation – which is primarily net-metered solar – represents capacity added to the system that does not need to be included in a utility’s rate base, saving money overall. Moreover, net-metered solar is an excellent, cost-effective way for utilities to meet their obligations under the RES.

This section is mainly dedicated to addressing the “fixed costs” issue with respect to distributed generation. However, Renew Missouri would also like to formally request that Staff publish utility’s annual Net Metering reports each year after they are submitted on April 15. This information is important for renewable energy developers and policy advocates to monitor renewable energy development in Missouri.<sup>6</sup> Publishing the reports automatically on the Commission’s website will remove the need for parties to request them from utilities or seek them using Missouri’s “Sunshine” law.

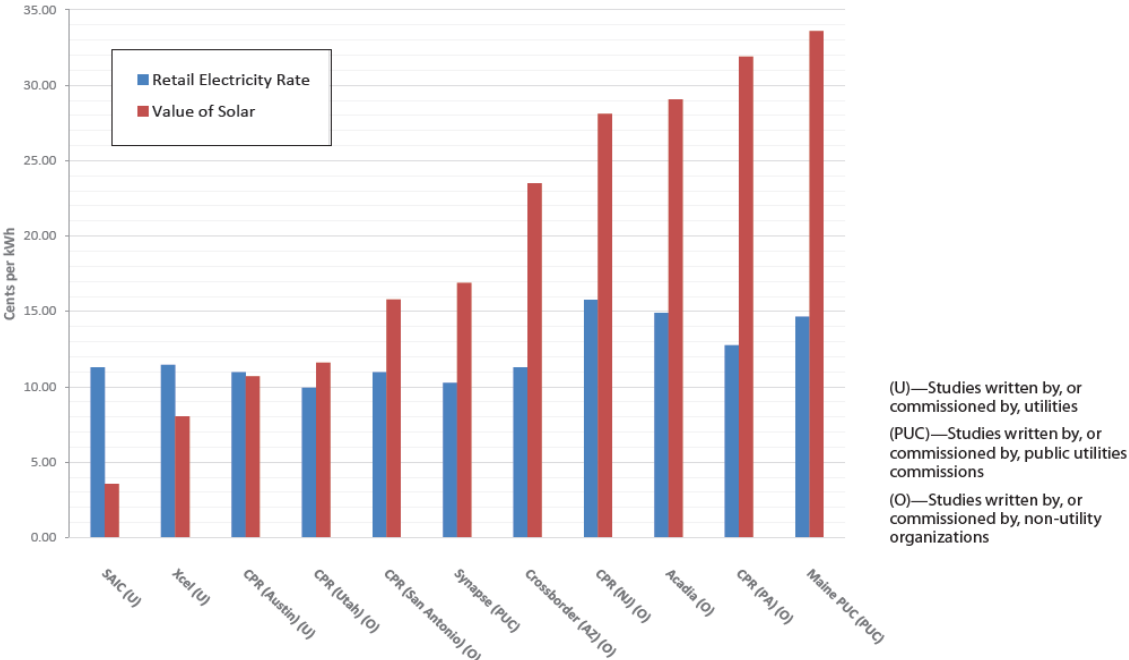
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<sup>6</sup> See the requirement at 4 CSR 240-20.065(10). In addition, it should be noted that Ameren Missouri has yet to submit its Annual Net-Metering Report for 2016, and is thus out of compliance with the Commission’s rule.

There is a growing national trend in the utility sector to claim that distributed or net-metered solar customers do not pay their fair share of grid costs. This line of argument posits that solar customers are receiving a “subsidy” from non-solar ratepayers. Groups across the country – including in Missouri this Legislative session – have used this claim to suggest punitive measures towards residential solar owners, including higher fixed charges or reduced compensation for kWhs from net-metered generation. However, these attacks on traditional net metering are almost never justified by accompanying cost-of-service studies or other proof to show how solar customers are subsidized or fail to pay their fair share of fixed costs.

This issue has been exhaustively studied across the country. Nearly every “Value of Solar” study conducted to date shows that solar owners actually create value for the grid rather than costing the grid money. The only exceptions are studies conducted by utilities themselves, which show a slightly lower value for solar energy than retail power.<sup>7</sup>

Figure 2: Average Retail Residential Electricity Rates Compared to the Values of Solar in 11 Cost-Benefit Analyses.<sup>31</sup>



<sup>7</sup> See the attached document, entitled “Shining Rewards: The Value of Rooftop Solar Power for Consumers and Society” by Lindsay Hallock (Frontier Group) and Rob Sargeant (Environment America Research & Policy Center).

Renew Missouri believes the existing Net Metering framework to be working adequately. If anything, the Legislature could improve the law by increasing the minimum system size to 2 MW or above, and by switching from a monthly to an annual true up framework. However, if the Commission is interested in studying the “fixed costs” or so-called “cross subsidy” issue, then Renew Missouri respectfully requests that it commission a Missouri Value of Solar study to be conducted by a neutral third party. The idea of a Value of Solar study is not to account for intangible societal and environmental benefits, although some states like Maine have chosen to include such things. Rather, the idea is to study the energy and financial benefits that result to a utility as a result of distributed solar on its grid. We are confident that Missouri’s study will not turn out to be an anomaly, but will follow the trend of other states in revealing that solar has a superior value to retail electricity.

A value of solar study would be a valuable tool. But special care should be taken when selecting a firm to conduct the study and establishing which factors should count into a value of solar study should be a collaborative process involving all interested stakeholders. In the interim, the Commission should resist utility efforts to undermine solar with higher fixed customer charges. In general, higher fixed charges are bad for consumers, and low-income customers in particular. They reduce the ability of a consumer to control their bills. They also send poor price signals, and discourage conservation.

The “fixed costs” or “cross subsidy” issue with respect to solar should be dismissed for another reason: the discussion is wildly premature. The attached study of the effects of net metering on utilities, conducted by Lawrence Berkley National Labs, concludes that distributed solar has a negligible effect on rates, even at 10% penetration.<sup>8</sup> Missouri is nowhere near that

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<sup>8</sup> *Financial Impacts of Net-Metered PV on Utilities and Ratepayers: A Scoping Study of Two Prototypical U.S. Utilities*, 2014, Ernest Orlando Lawrence Berkeley National Laboratory, pg. 55.

level of penetration; investor-owned utilities are likely closer to 0.1% distributed generation. The fact that investor-owned utilities are seeing decreased sales due to distributed solar is immaterial. The effort to justify extra fees for solar customers is simply the anti-competitive reaction of an archaic institution that is threatened by change. Missouri is simply nowhere near the levels of DG penetration necessary to worry about solar having a negative impact on rates.

### C. Community Solar

Demand for community solar is increasing in Missouri and nationwide. These projects can be a win/win for the utility and for participating and non-participating ratepayers alike. Customers who have no option of installing distributed solar themselves can still achieve the environmental and long-term costs savings benefits of solar through participating in a community solar program. And where the solar generation is paid for entirely by participating customers, the utility has the opportunity to earn a return on generation assets while not raising (or perhaps lowering) rates on other ratepayers. Because of this different cost-recovery structure, community solar potentially offers the most cost-effective method of meeting the RES' requirements when compared with every other alternative. Given the opportunity for ratepayers to save money and for shareholders to earn higher returns, and given community solar's potential for cost-effective RES compliance, the Commission should order each investor-owned utility to design and offer community solar programs to its customers within two years.

The key to the success of community solar is the declining price of utility-scale solar. In Minnesota, nearly every ratepayer statewide can purchase blocks of solar energy at a price lower than the retail cost of power.<sup>9</sup> Even where utilities cannot offer a solar price at or below the residential retail rate, customers can still achieve significant cost savings. By allowing customers to lock in their solar rate for a long time period (e.g. 20 years), customers can use

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<sup>9</sup> <http://mncommunitysolar.com/how-it-works>

community solar to hedge against inevitable future rate increases. But although the cost of utility-scale solar is likely to continue declining, the time to invest in community solar is now. As the Federal Investment Tax Credit (ITC) scales down over the next few years,<sup>10</sup> it is important to begin development as soon as possible to take advantage of tax credits while they exist.

Renew Missouri believes that Ameren Missouri's recent "Solar Subscriber" program presents a suitable model on which the rest of Missouri's utilities can build. The program was approved as a 1 MW pilot, and will allow customers to meet up to half of their monthly usage with solar, lock in their solar rate (yet to be determined) for up to 20 years, with no minimum time commitment and a small sign-up fee.<sup>11</sup> However, Ameren Missouri's pilot program is far too small to serve the eventual demand and to achieve the economies of scale necessary to price a large program correctly.

With aggressive marketing to homeowners, small businesses, renters, and low-income customers, Missouri utilities should be able to fully subscribe 20 MW or more of community solar today. Solar companies in Missouri are standing at the ready to build utility-scale projects and to sell the output at a price that would give utilities a significant profit and still allow customers to save. All that is missing is an order from the Commission directing Missouri's IOUs to design and offer community solar programs to their customers within the next two years.

## **2. The Commission's role regarding PACE and PAYS programs**

### **A. "Property Assessed Clean Energy" Financing**

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<sup>10</sup> Business Energy Investment Tax Credit, US Department of Energy. <https://energy.gov/savings/business-energy-investment-tax-credit-itc>.

<sup>11</sup> See EA-2016-0207.



Renew Missouri supports the proliferation of PACE financing programs by Missouri municipalities and counties. PACE presents a unique method of financing cashflow-positive energy improvements for both the residential and C&I sectors that benefits the property owner, the lender, and all utility customers. PACE is distinct in that it enables the type of “no money down” financing for energy efficiency and distributed generation, but the loan runs with the property rather than the ratepayer. The Commission can support PACE by encouraging its integration with utility-sponsored energy efficiency and demand-side management programs under MEEIA.

B. “Pay As You Save” Financing

The Commission has the authority under MEEIA to facilitate the creation of PAYS programs. Renew Missouri supports the PAYS model, along with other on-bill financing models, as a method of increasing investment in energy efficiency for homeowners and businesses. Most importantly, PAYS represents an opportunity for Missouri utilities to drastically increase customer adoption of EE measures. PAYS makes particular sense to use in tandem with utility-sponsored efficiency programs since the utility already has the point of contact and billing established with the customer. While marketing its existing programs, a utility can simultaneously offer financing as a strategy for higher measure adoption. This is far easier for the customer than obtaining financing through additional entities.

**3. The implementation of modified rate design proposals**

A. Residential time of use rates

The Commission should continue to support efforts to institute Time-of-Use (TOU) rates or Time-Varying Rates. TOU rates give consumers more control over their bills, and can be used to

significantly reduce residential peak demand. In a study by Christensen and Associates for the Kansas Corporation Commission,<sup>12</sup> (see attached) TOU rates consistently shifted demand from peak to off-peak. Shifting demand to off-peak hours helps reduce system costs overall because energy created during the peak is more expensive than energy created off-peak. Additionally, Time of Use rates better reflect cost causation. It would follow then that customers should pay the highest prices for energy during those times.

B. Inclining block rates

The Commission has the power to order utilities to institute Inclining Block Rates (IBR). The Commission should make every effort to support an inclining block rate structure for residential rates. Such a structure causes energy to become more expensive with higher use.

This structure has several benefits. First, it sends correct price signals. IBR encourages energy efficiency and conservation. By making energy more expensive, as more is used, consumers are properly incentivized to reduce their consumption. In the Christensen study (attached),<sup>13</sup> it was estimated that an IBR would reduce summer energy sales by 2.3% and winter sales by 3.4%. Moreover, Missouri utilities have produced studies showing that moving toward IBR would reduce customer usage meaningfully as well.

Second, an IBR structure is more equitable to low-income customers. Low income customers generally use less energy than higher income customers. Missouri IOUs currently have a declining block rate structure, causing energy to become marginally less expensive when more is used. This means that the low-income and low-usage customers – those who are most

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<sup>12</sup> *Residential Rate Study for the Kansas Corporation Commission*, 2012, Christensen Associates Energy Consulting, 36-37.

<sup>13</sup> *Id.* at 35.

burdened by energy bills – are paying more than their high-income, higher-usage counterparts per kWh used.

Third, IBR gives consumers more control over their bill by improving the payback for energy efficiency and distributed generation measures. By making the first (and therefore most commonly used) block of energy the least expensive, IBR allows consumers the ability to more greatly affect their bill by conserving energy and allowing them the opportunity to avoid the later, more expensive blocks.

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Respectfully Submitted,

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