

Motion of ProRate Energy (PRE) to Amend Community Solar Rules

Before The Council of the City of New Orleans

RESOLUTION AND ORDER ESTABLISHING A DOCKET AND OPENING A RULEMAKING PROCEEDING TO ESTABLISH RULES FOR COMMUNITY SOLAR PROJECTS (Docket No. UD-18-03) May 12, 2024

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WHEREAS: On October 10, 2007, the City Council-appointed New Orleans Energy Policy Taskforce made a recommendation to “promote remote/displaced generation by allowing utility customers to locate and share the ownership of off-site renewable-energy generating capacity.”¹ In 2018, more than a decade later, the community solar (CS) docket UD-18-03 was initiated, and on March 28, 2019, the City Council adopted Resolution No. R-190-111 which created Community Solar Rules. On August 29, 2019, Entergy New Orleans (ENO) filed its initial Implementation Plan and on January 10, 2020, filed its Supplemental Implementation Plan. On January 28, 2021, the Council of the City of New Orleans (“the Council”) adopted Resolution R-21-38 which approved the Utility’s Supplemental Implementation Plan. On December 8, 2021, the Alliance for Affordable Energy filed its motion to Amend the Community Solar Rules which requested that Section II be amended by changing the definition of “Low-Income Customers.” On February 3, 2022, the Council adopted R-22-76, Resolution and Order Amending the Community Solar Rules, which approved the Alliance for Affordable Energy’s December 8, 2021 Motion to Amend the Community Solar Rules, thereby modifying the definition of “Low Income Customers.” On July 13, 2022, Madison Energy Investments (“MEI”) filed a motion to

¹ <https://123gosolar.com/static/docs/EnergyHawk.pdf> , page 17

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amend the Community Solar Rules. On November 2, 2023, the Council adopted Resolution R-23-507 to amend the Community Solar Rules (CSR), which made changes to the tariff rate for all customers as well as other features, including additional amendments for Low-Income customers.

WHEREAS: Since 2006, ENO's remuneration for rooftop solar has been Net Energy Metering (NEM); whereby NEM provides kWh bill credits when monthly production is more than consumption but no cash credits. These credits can only be used to discount future bills.

WHEREAS: Investments in Rooftop Solar give customers less than one-third as much return on their investments than in Energy Efficiency (EE) in a utility with flat rates², and investments in Load Flexibility (LF) (which saves money by shifting demand to coincide with periods of lower-priced electricity) can be more cost-effective than either solar panels or EE in a utility with time varying rates (aka, Time of Use [TOU] rates).³

WHEREAS: EE and LF investments are practically ineffective and lose invested money in a Rooftop Solar home remunerated with NEM if the annual kWh production is close to or exceeds consumption because neither EE nor LF provide any bill savings or income.

WHEREAS: Affluent homeowners are probably the most likely to benefit from tax credits because they normally are able to wait for any future reward, will tend to do that with rooftop

² <https://www.aceee.org/sites/default/files/solar-and-ee-042519.pdf>, see table 1.

³ <https://www.sciencedirect.com/science/article/abs/pii/S0306261913007198>

solar and energy efficiency. However, the most cost-effective choices, EE and LF are often off the table because, as noted above, they provide no bill savings or income.

WHEREAS: New Orleans now has more than 50 MW of rooftop solar.⁴

WHEREAS: “Rooftop Community Solar (RCS) is standard Rooftop Solar, supplemented by extra payments received monthly, where the full dollar value of electricity instantaneously generated in excess of local consumption is shared with subscribers in the Community Solar (CS) way, and at the CS price.”⁵

WHEREAS: ProRate Energy further characterizes RCS in the following manner.:

1. RCS is an optional alternative remuneration to NEM. An owner of rooftop solar may not choose both during a single billing cycle.
2. If a ratepayer with a solar array chooses RCS, all net consumption is billed in the standard way, but net generation is not credited against past or future consumption. Instead, the generation allows the rooftop solar array owners to create income streams to themselves via payments to them by community solar subscribers.
3. RCS requires smart meters (or equivalent hardware) to measure the amount of electricity exported to the grid as often as every 5 to 15 minutes.
4. Via AMI (automated metering infrastructure), ENO receives a report of net export over consumption and, conversely, a report of net consumption over production every 15

⁴ <https://www.eia.gov/state/analysis.php?sid=LA#117>

⁵ <https://www.givenola.org/ProRateEnergy>

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minutes for each meter (this is the practical and intended effect of the word “instantaneously” in RCS’s definition).

5. Before ENO installed smart meters less than five years ago, net energy metering was limited to measurements once a month; now such measurements occur four times an hour, i.e., 24 times 4 times a day or roughly three thousand times a month.
6. Net export in any of these 3000 measurements is not decreased by net consumption in any other of these 3000 measurements.
7. The current rule for CS remuneration sets it at the current retail price. Although the current retail price for residential customers is constant, the Council has implemented various alternative TOU pricing. When such rates are adopted, the “full dollar value” of a kWh exported during one of those 3000 measurements can be expected to be different from the value assigned to another kWh exported at a different time during the same month.
8. ProRate Energy has already presented and the Council has already considered a rate design that will pay \$0.50 more per kWh than the wholesale price during the five hundred hours of the year when the utility demand is nearest its peak.⁶

WHEREAS: PRE’s careful reading of the current CS rules indicates that it may already offer a legal way to roll out RCS without installing any new solar panels or changing the CS rules.

WHEREAS: The assertions in these whereases indicate that we can grow community solar faster and at one-third the cost with RCS than with large-scale CS, namely at nearly 5 MW per

⁶ <https://www.givenola.org/ProRateEnergy>

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siting, by investing in EE or LF in many to most of our large group of homes that already total more than 50 MW of rooftop solar.

WHEREAS: The benefit to rooftop solar owners via RCS can exceed NEM and offer all the following benefits simultaneously:

1. Although without any EE or LF upgrades rooftop solar owners will receive higher bills from the utility with RCS than NEM, Rooftop Solar owners can opt in to RCS and then receive increasing incentives to invest in their homes to increase the ratio of production to consumption in a positive feedback manner. This can easily create a situation where the RCS bill plus the income will create a lower total cost of electricity than that provided by NEM.
2. This will allow such customers to have a negative cost of electricity without requiring the utility to make payments to ratepayers.
3. The surplus of electricity generation from RCS will also benefit ratepayers who are or plan to become community solar subscribers. This will happen much faster and cheaper than with large-scale CS, namely solar farms which produce at 5 MW.
4. Both low income and affluent ratepayers benefit. RCS creates a win-win scenario.
5. Investments in LF can be far more cost-effective than EE. This will provide tangible benefits for New Orleans and finally begin to substantially repay the roughly \$90 million spent on smart meters less than 5 years ago.

6. Although some solar installers explicitly require a thorough application of energy efficiency measures before solar panels are added,⁷ this is not the industry standard.⁸ Thus, this leaves lots of room for mining this resource. Even better, with the rapid development of more cost-effective EE and LF opportunities, every home will present many opportunities to increase solar exports at an affordable price — that might even be as low as the price of changing lightbulbs.

WHEREAS: To help clarify this concept, here is a sample calculation example. Assume a home has a 3-kW air conditioner (AC), with a coefficient of performance⁹ of 3, which means that it outputs 3 kW of cooling and demands one kW of electricity while it runs. If the AC is optimally sized for its load, it will run 20 minutes per hour which implies that one-third of a kWh is consumed during that hour. To instantaneously meet this demand, the solar array must be 1 kW. But to meet this demand on average, the solar array needs only to be one-third of a kW. If this were a NEM customer with the electricity production closely matched to the load, and if the home only has this AC, and the AC only runs while the sun is shining, then the home would need only one-third of a kW solar array and the energy bill would be close to zero. However, if the homeowner switched to RCS remuneration, and the frequency of smart meter reading and reporting were high enough to see all the fluctuations and never gather net consumption mixed with net generation or vis-a-versa, the generation exported to the grid would be $1/3 \text{ kW} \times 2/3 \text{ hour} = 2/9 \text{ kWh}$ for each hour the AC operates. Assuming this happens during the cooling season, when there are 8 hours a day that are good for solar energy generation, 30 days times 8

⁷ <https://www.posigen.com/blog/how-posigen-makes-solar-available-to-all>

⁸ <https://bigpivots.com/solar-lipstick-on-an-energy-hog/>

⁹ <https://greenbusinesswatch.co.uk/cop-vs-spf#>

hours of cooling will consume 240 hours times $1/3$ kWh / hour = 80 kWh during that month. During the same time, energy exported to the grid would be 240 hours times $2/9$ kWh per hour = 53.3 kWh or two-thirds of \$80 — as would be expected. During the same period, measured in dollars, and assuming for the sake of simplicity that the retail price of a kWh is \$0.10, then the rooftop solar customer loses \$5.33 by switching from NEM to RCS (discounting the income from sales to subscribers). However, more common AC sizing for the average home in New Orleans would employ a 3-ton AC (which equals 10.55 kW^{10}) which is about 3.5 times the size of the 3-kW AC described earlier in this paragraph. Thus, a more realistic rise in the electricity bill after switching from NEM to RCS during the cooling season is 3.5 times the size mentioned above or about \$19 in that month. The RCS rooftop solar customer could then sell all her electricity exports to subscribers at $1/2$ the retail price or \$9.5 per month. (This “ $1/2$ ” value is not determined and is only used as a placeholder for the actual negotiated price for the sales to the community solar subscribers’ market.) Thus, going from NEM to RCS causes a net “sacrifice” of about \$10 a month to get approximately \$10 a month of cash-in-hand. By extrapolating to the rest of the cooling season, the annual sacrifice cost and cash-in-hand are each about \$50/year. If we add a standard electric water heater to the home and the minimum solar panels needed to run it, and assume the water heater always runs when the sun is shining then, PRE recommends that the best investment of the \$50 is the installation of a timer onto a standard electric water heater so that electricity is habitually purchased and consumed when the retail price is lowest. This can be expected to produce annual savings of almost \$200 per year if ENO adopts a very dynamic TOU rate.¹¹ The upshot of this series of events: switching from NEM to RCS and the smart

¹⁰ <https://www.unitconverters.net/power/ton-refrigeration-to-kilowatt.htm>

¹¹ <https://www.buildingscienceinnovators.com/clep-lowers-greenhouse-gas-emissions-while-financially-benefiting-all-ratepayers.html>, timestamp 10.38 minutes.

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investing of cash-in-hand earned from sale to subscribers, is that the same ratepayer will soon have a negative annual cost of electricity! That cash flow can fund further investments in either EE or LF which will continue to 1) make the energy bill even more negative and 2) increase the amount of kWhs available to be sold to community solar subscribers. This benefits both rooftop solar owners as well as community solar subscribers.

WHEREAS: In 2022, Together New Orleans (TNO) submitted a proposal to UD-21-03, the resilience docket, to build tens of Community Lighthouses (CL) expressly for the purpose of providing shelters where our residents can go to cool-off, recharge cellphones, locate food, etc. These would be sited so that no person needs to walk more than half a mile to find one.

WHEREAS: Each CL would be composed of a large building (often a place of worship) that would be fitted with many tens of kW of rooftop solar and a commensurate battery system so there would be sufficient power to support the stated comforts for the expected large group of residents who are still in the city in the aftermath of a large storm like Hurricane Ida.

WHEREAS: Because a rooftop solar array sized for a mere church is far smaller than the needs of a CL, annual generation would be very likely to exceed the building's consumption.

WHEREAS: Currently, no means exist so that the excess generation produced at a CL can be shared with others, and even more unfortunate, most of this unconsumed electricity cannot be used for future bill credits to lower actual bills via NEM, even for the church.

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WHEREAS: As explained to Together New Orleans at the time their CL proposal was made to the Resilience Docket, for CL to optimally work, we also need to work to get these RCS provisions to become part of the community solar rules because the existing CS Rules at that time were created in 2019 and did not allow solar panels, used to create electricity for a Community Solar Generator, to be employed for any other purpose.

THEREFORE, BE IT RESOLVED THAT:

Changes should be made as necessary to the Community Solar Rules, as well as to UD-18-03's resolutions, to allow for the inclusion of "Rooftop Community Solar" as defined in this motion.

CONCLUSION

ProRate Energy is aware that the Council is supportive of Community Solar, and additional federal funding for Community Solar, Energy Efficiency and Load Flexibility is expected this year. To this end, PRE respectfully submits that these recommendations be considered as major improvements to the rollout of Community Solar in New Orleans.

Sincerely,



Myron Katz, Ph.D.

Vice President, ProRate Energy