

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 10, 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 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, approving 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 amend Section II, 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 and approving 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

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

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13, 2022, Madison Energy Investments (“MEI”) filed a motion to amend the Community Solar Rules. On November 2, 2023, the Council adopted Resolution R-23-507 to amend the Community Solar Rules (CSR), making changes to the tariff rate for all customers and to other features, including additional amendments for Low-Income customers.

WHEREAS: Since 2006, ENO’s remuneration for rooftop solar is Net Energy Metering (NEM); whereby NEM provides kWh bill credits when monthly production is more than consumption but never a cash credit; these credits can only be used to discount future bills.

WHEREAS: Investments in Rooftop Solar are one-third as cost-effective as investments in Energy Efficiency (EE) in a utility with flat rates¹ and investments in Load Flexibility (LF) [which saves money by shifting demand to lower priced electricity] can be more cost-effective than either in a utility with time varying rates (aka, Time of Use [TOU] rates).²

WHEREAS: EE and LF investments are practically hampered in a Rooftop Solar home if the annual kWh production is close to or exceeds consumption, because they provide no bill savings or income.

WHEREAS: Affluent homeowners are the most likely to benefit from tax credits, normally invest for future rewards, and will tend to do that with rooftop solar and energy efficiency; but because of the previous two assertions, the most cost-effective choices, EE and LF are often off the table.

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

² <https://www.sciencedirect.com/science/article/abs/pii/S0306261913007198>

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WHEREAS: New Orleans now has more than 50 MW of rooftop solar.¹

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.”²

WHEREAS: ProRate Energy further characterizes Rooftop Community Solar in the following manner.

1. RCS is an optional 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 consumption is billed in the standard way, but generation is not credited against 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 to measure the amount of electricity exported to the grid as often as every 5 minutes to 15 minutes.
4. Via AMI (automated metering infrastructure), ENO receives a report of net export of consumption and conversely a net consumption of production every 15 minutes for every meter (this is the practical and intended effect of the word “instantaneously” in RCS’s definition).

¹ <https://www.eia.gov/state/analysis.php?sid=LA#117>

² <https://www.givenola.org/ProRateEnergy>

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5. Before ENO installed smart meters less than five years ago, net metering was limited to measurements once a month; now such measurements occur four times an hour, i.e., 24 x 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 fixed and constant, the Council has implemented various alternatives time of use (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 more than \$0.50 more per kWh than the wholesale price during the five hundred hours of the year when the utility peak demand is nearest its peak.¹

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 on this page indicate that we can grow community solar at one-third the cost and faster with RCS than with macro CS, namely at nearly 5 MW per siting, by investing in energy efficiency and load flexibility in many to most of our large cadre of homes that already total more than 50 MW of rooftop solar.

¹ <https://www.givenola.org/ProRateEnergy>

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

1. Although rooftop solar owners will receive less income with RCS than NEM without any EE or LF upgrades, 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; and can easily create a situation where the RCS income will exceed the NEM benefit.
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 benefit ratepayers who are community solar subscribers. This will happen much faster and cheaper than with macro-CS, namely solar farms who produce at 5 MW.
4. Both low income and affluent ratepayers benefit from this: RCS creates a win-win scenario.
5. Investments in Load Flexibility can be far more cost effective than Energy Efficiency. 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,¹ this is not the industry standard.² Thus, this leaves lots of room for mining this resource. Even better, with the rapid development of more cost-effective energy efficiency and load flexibility opportunities,

¹ <https://www.posigen.com/blog/how-posigen-makes-solar-available-to-all>

² <https://bigpivots.com/solar-lipstick-on-an-energy-hog/>

every home will present many opportunities to increase solar exports at an affordable price, maybe even as low as the price of changing lightbulbs.

WHEREAS: To help clarify this concept, here is an example: Assume a home has a 3-kW air conditioner (AC), with a coefficient of performance¹ 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 per hour. To instantaneously meet this demand, the solar array must be 1 kW. But to meet this demand on average, the solar array need only be one-third of a kW. If this were a NEM customer with the electricity production closely matched to the load, the home only has this AC, and the AC only runs while the sun is shining, 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 switches to RCS remuneration, and the frequency of smart meter reading and reporting is 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 $1/3 \text{ kW} \times 2/3 \text{ hour} = 2/9 \text{ kWh}$ for each hour the AC operates. Assuming this happens near the height of the cooling season, 30 days times 8 hours of cooling will consume 240 hours times $1/3 \text{ kWh} / \text{hour} = 80 \text{ kWh}$ during that month. During the same time, energy exported to the grid would be 240 hours times $2/9 \text{ kWh per hour} = 53.3 \text{ kWh}$... that is two-thirds of \$80 as you would expect. Measured in dollars, assuming, for the sake of simplicity, the retail price of a kWh is \$0.10, then the rooftop solar customer loses \$5.33 by switching from NEM to RCS (without considering the sales to subscribers' income). However, more common AC sizing for the average home in New Orleans would employ a 3-ton AC (which

¹ <https://greenbusinesswatch.co.uk/cop-vs-spf#>

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equals 10.55 kW¹) which is about 3.5 times the size of the 3-kW AC described earlier in this paragraph. So, a more realistic effect on a common electric bill is 3.5 times the size mentioned above or about \$19 in that month. The rooftop solar customer could then sell her electricity exports to subscribers at ½ the retail price or \$9.5 per month. (This “½” value is not determined and only used as a placeholder for the actual negotiated price for the sales to subscribers’ market.) Thus, going from NEM to RCS causes a net “sacrifice” of \$10 a month to get roughly \$10 a month in cash-in-hand. By extrapolating to the rest of the cooling season, the annual sacrifice cost and cash-in-hand is about \$50/year. Now, let us add a standard electric water heater to the home and the solar panels needed to run it and assume the water heater does not run when the sun is shining. In this case, ProRate Energy recommends the best investment is for the \$50 is a \$50 one-time purchase and 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.² The result of this series of events: switching from NEM to RCS and smart investing the cash-in-hand earned from sales to subscribers, is the same ratepayer will soon have a negative annual cost of electricity. That cash flow will fund further investments in either EE or LF that will make the energy bill more negative and increase the amount kWh’s sold to community solar subscribers. This benefits both rooftop solar customers and community solar subscribers.

¹ <https://www.unitconverters.net/power/ton-refrigeration-to-kilowatt.htm>

² <https://www.buildingscienceinnovators.com/clep-lowers-greenhouse-gas-emissions-while-financially-benefiting-all-ratepayers.html>, timestamp 10.38 minutes.

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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 a place that allowed our residents to go to cool-off, recharge cellphones, find food, etc. that would be sited around the city so that no person need 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 that the stated comforts could be provided in the aftermath of a 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 highly likely to highly exceed consumption.

WHEREAS: However, no means exist for the excess generation produced at a CL to be shared with others and even more unlucky: most of that unconsumed electricity cannot be used as future bill credits via NEM for even the church.

WHEREAS: As was explained to the leadership of Together New Orleans, at the time of the CL proposal to the Resilience Docket, for CL to optimally work, we need these RCS provisions to become accepted within the community solar rules because then current CS Rules (i.e., those of 2019) did not allow any solar panel used to create electricity for a Community Solar Generator to be used for any other purpose.

THEREFORE, BE IT RESOLVED THAT:

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

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Conclusion

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



Myron Katz, PhD

VP of ProRate Energy

