

(b) The rates shall be nondiscriminatory and established only after an investigation of the costs and benefits of customer-sited generation. The Commission shall establish net metering rates under all tariff designs that ensure that the net metering retail customer pays its full fixed cost of service. Such rates may include fixed monthly energy and demand charges.

A plain reading of § 62-126.4 indicates that the electric utility is required to file for revised net metering rates under Section (a); and the Commission shall establish nondiscriminatory net metering rates only after an investigation of the costs and benefits of customer-sited generation under Section (b). As evidenced by this structure, the Legislature seems to have intended for an independent study to be conducted by the Commission and not by the utility. Comments from the drafters of H.B. 589 support this reading. For example, Representative John Szoka (R-Cumberland), the chief author of the Bill indicated that he envisioned that the Commission, and not Duke, would conduct the investigation required by H.B. 589. Rep. Szoka stated: *“It’s not up to the utility to determine whether net metering is good or bad... That is not the intent.”*¹

Setting net metering rates for the next 10 years, as Duke proposes in its Joint Application, requires input from a wider array of stakeholders and a closer examination of the costs and benefits of customer-sited generation. While Duke sought input from some stakeholders,² the stakeholders that are most directly impacted by the new tariffs were left out; including the rooftop solar installers that make up NCRSI.

The Commission should broaden the scope of its consideration beyond Duke’s Joint Application. Other parties should be given the opportunity to present evidence on the appropriate means of calculating the costs and benefits of customer-owned solar. The Commission should not accept Duke’s Rate Design Study as the final word on what is the

¹ <https://energynews.us/2022/03/15/rooftop-solar-companies-enter-fray-over-north-carolina-net-metering-proposal/>

² Joint Application at 10-11.

cost to serve net metering customers. The Commission should instead conduct its own study of net metering and solicit responses from interested parties, including net metering customers.

If the Commission is unwilling to require an independent study, there should be an alternative process established to address the concerns of rooftop solar installers and their customers. As will be explained in more detail below, the Joint Application submitted by Duke will have a devastating impact on that industry. The concerns of solar installers should be factored into the Commission's plan for net metering rates and thus far, we have not had a seat at the table. NCRSI is willing to work constructively with Duke and the Commission in order find common ground, but the Joint Proposal as it currently stands appears to be unworkable for the rooftop solar industry.

ii. Duke's Proposed NEM Tariffs Will Have a Chilling Effect On The Rooftop Solar Industry In North Carolina.

NCRSI downloaded data from 30 existing Duke customers with solar systems installed for over a year and analyzed their data under Duke's proposed NEM rate structures. We found a reduction in value to the customer of 20% - 35% over the life of the solar system. This is primarily due to the financial disadvantages of sizing a system closer to a home's actual annual energy usage. The NEM Tariffs reduce financial returns for homeowners who want a significant portion of their energy offset with rooftop solar. This reduction is more substantial than the minimal impacts touted by Duke.

NCRSI's analysis also indicates that the proposed rate design would likely result in a substantial reduction in the average size of new installations. This in turn would reduce the ability of Duke customers to own their own power supplies and slow North Carolina's progress toward achieving its goal of reducing electric power sector greenhouse gas

emissions by 70% below 2005 levels by 2030 and attaining carbon neutrality by 2050.

Currently, solar energy is worth 9.34 cents per kWh in the DEC territory. Under the new proposal, the value of solar energy would drop by 28% to an average of 6.8 cents per kWh. While 6.8 cents is the average value of solar in Duke's proposed rate schedule, the value ranges dramatically (from 20% - 35% in our analysis) from one solar system to another because the rates are so complicated, and it is difficult to quantify consumer behavior shifts. Ultimately, solar's value will be dependent not only on the time of day, day of the week, and month of the year, but also on the ratio of solar production vs. energy consumption from hour to hour for each home.

iii. Duke's Proposed NEM Rates Are Too Complicated.

Residential and commercial solar installers will not only have to work under the new economics prescribed by Duke's proposed NEM Tariffs, but they will also have to calculate the value of new solar installations for their customers. Calculating the monetary impact of prospective installations under Duke's NEM Tariffs is currently impossible given the complexity of the proposed rates and credits.

Current residential rates have three components: an energy charge, basic facilities charge and a 94 cent Renewable Energy Portfolio Standard (REPS) fee. The NEM Tariffs would charge customers for nine different components including some components that are based on a complicated Time of Use (TOU) formula. The table below shows how current fees compare to the proposed fees:

Current Bill	Proposed Bill
<ul style="list-style-type: none"> • Energy Charge • Basic Facilities Charge • Repts Rider Per Month 	<ul style="list-style-type: none"> • Energy Charge <ul style="list-style-type: none"> ○ Discount ○ Off Peak ○ On Peak ○ Critical • Basic Facilities Charge • Repts Rider Per Month • Grid Access Fee For >15Wk Per Kwdc • Non-bypassable Charge Per Kw • Minimum Bill Calc • Minimum Bill Charge • Total Bill Before Excess Solar • Excess Solar Adjustment

Energy charges on the TOU rates are divided into 4 parts based on when energy is imported or exported from the utility:

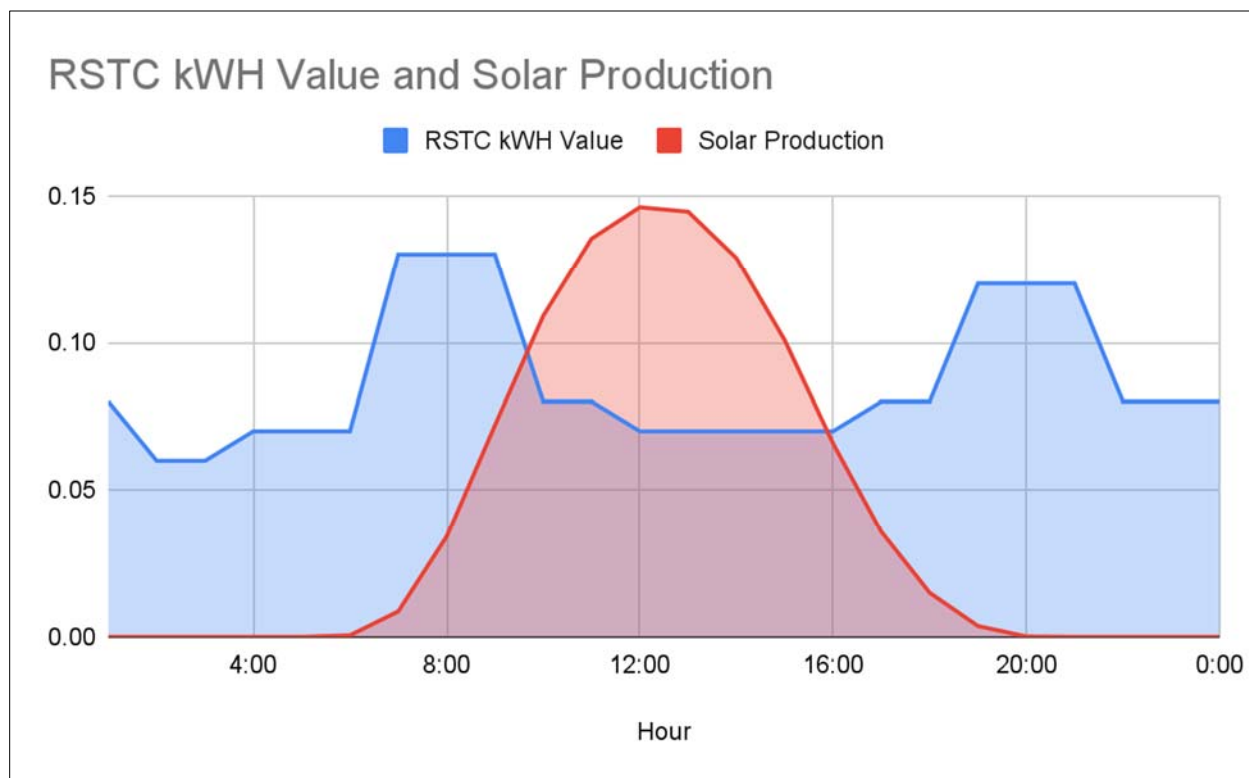
- Discount - 6.09 cents per kWh
- Off Peak - 8.04 cents per kWh
- On Peak - 19.23 cents per kWh
- Critical Peak - 35 cents per kwh

The utility can choose up to 20 unknown Critical Peak Periods during the year. During these periods, cost per kWh jumps from 19.23 cents to 35 cents. The rates do not allow these additional costs to be offset by solar production.

Under the current net metering system, the NCRSI companies need 24 energy data points to model solar effectively (12 months of energy usage data and 12 months of projected solar production). Under the proposed plan, those 24 data points would increase to 17,520; with hourly data required for both solar (8,760 hours) and usage data (another 8,760 hours). And this does not include factoring in Critical Peak Pricing rates, which are unknowable. This adds magnitudes of complication to the design process while adding no value for solar system owners. Finally, there is currently no accessible means

for a customer to access their hourly usage data in a human-readable format from Duke's website, which moves this analysis from complicated to impossible.

Adding TOU rates to the plan adds additionally complications. The graph below shows the value assigned to TOU periods (in blue) juxtaposed against hours of solar production (in red). The hours when solar produces the most energy (middle of the day when the sun is shining high in the sky) are specifically diminished by the proposed rates.



However, the hours of the day with and without sunshine do not necessarily align with system costs. And there are possible unintended consequences that need to be studied. For example, the implementation of TOU rates can actually require customers to install panels that face a different direction than is ideal for maximum energy production. The best place to put panels is generally a south-facing roof, which gets more sun during midday. But Duke's proposed TOU rates may make it more economic to install solar panels on a west/southwest facing roof in order to earn a credit for kWh at peak

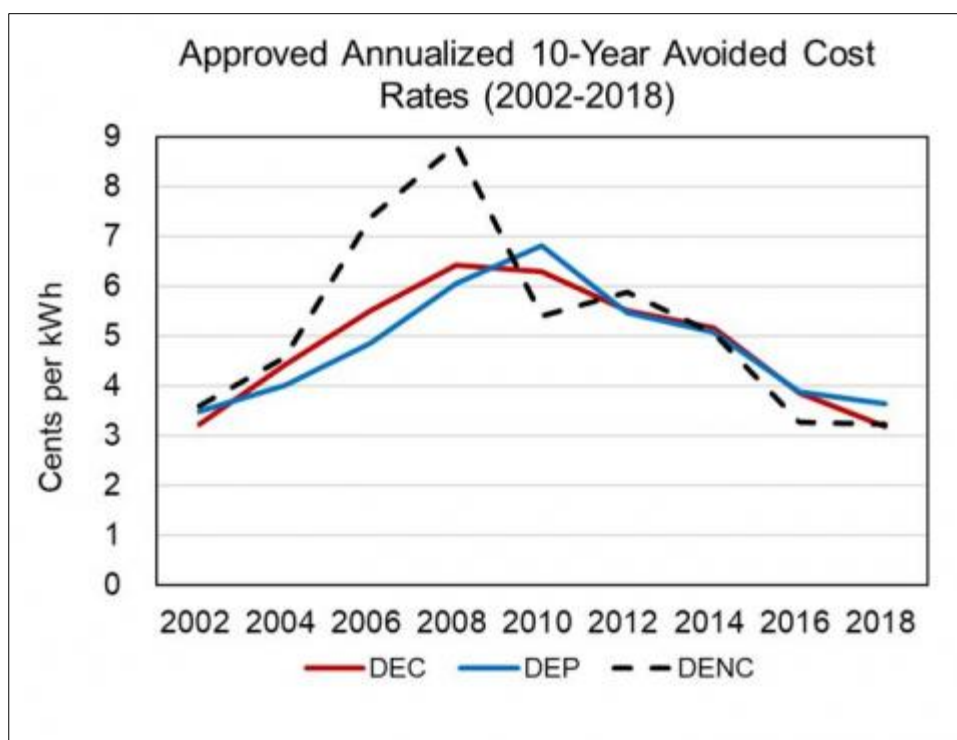
times, which gets more sun late in the afternoon. Any solar owners with south- or east-facing roofs will suffer because their systems will not be producing a lot of kWh during peak times. These are the real-world impacts that solar installers and customers will have to grapple with that have not been fully considered in Duke's proposal. More analysis is needed in order for the Commission to determine whether the TOU periods in Duke's NEM proposal are appropriate for solar customers.

This complexity will make it easy for customers to be taken advantage of and further damage the solar industry. We endeavor to provide our customers with the most accurate projections of solar installation benefits possible and do not want to over-promise in order to make a sale. Our fear is that the complexity and vagueness of the proposed NEM Tariffs will make it so difficult to estimate solar benefits that actual benefits will fall outside the range of projections. This will result in an erosion of confidence in our industry and a loss of credibility. While NCRSI and other solar installers are sophisticated companies that are capable of projecting rates based on available data, the proposed NEM Tariffs are too complicated and too vague. We need to be able to accurately project customer savings.

iv. Duke's Export Rate Should Not Lock In The Current, Historically Low Avoided Cost Rate For QFs And Should Reflect Both The Costs And Benefits Of Solar.

Duke's proposal to lock in the current Net Excess Energy Credit of \$0.0268/kWh for the next 10 years at the Commission-approved avoided cost rate under PURPA is unreasonable. The avoided cost rate for QFs is adjusted every two years by the Commission. The below chart shows how avoided costs rates have fluctuated over the period 2002 through 2018:³

³ <https://publicstaff.nc.gov/public-staff-divisions/economic-research-division/avoided-costs-rates>



As shown above, the rate reflected in the NEM Tariffs of \$0.0268/kWh is a historically low avoided cost rate, lower than any other Commission-approved rate over the past 20 years; yet Duke proposes to lock in this rate for NEM customers for the next 10 years. This low, 10-year fixed rate is unreasonable and should be rejected by the Commission.

When considering a more reasonable export rate, the Commission should weigh the costs and benefits of any generation resource symmetrically. The Commission should develop a process that identifies known or reasonably expected measurable costs and benefits that can be factored into the ratemaking process for net metering rates that compensate eligible customer-generators for energy exported to the grid. This should be a forward-looking, long-term, and incremental analysis. This is fundamentally the same consideration that Duke makes in assessing generation costs in its integrated resource plan (IRP). A utility makes economic decisions that consider the entire life of a project, and such long-term analysis should also apply to an eligible customer-generator. Given

that the typical warranty provided for solar components is 25 years, this would be an appropriate analysis period for Duke's net metered customers. A long-term approach ensures unbiased evaluation of system resources, ensures ratepayers are paying fair value for avoided future costs, and compensates eligible customer-generators fairly.

NCRSI proposes that the Commission consider setting an export credit that accounts for all costs and benefits of customer-owned renewable generation in a manner similar to the recent orders issued by the Kentucky Public Service Commission when considering this same issue. (See Kentucky Public Service Commission Case No. 2020-00174, Order (May 12, 2021); and Case Nos. 2020-00349 and 350, Order (September 24, 2021)). In those cases, the Kentucky Commission considered the following long-term benefits of customer-owned solar in addition to avoided energy, generation capacity costs and ancillary service costs:

- **Avoided Distribution Capacity Costs-** Avoided distribution capacity costs are a commonly quantified component of net metering rates because of the benefits that distributed generation provides on the distribution system. For example, customer-generators can reduce a utility revenue requirement by lowering its investment in additional distribution equipment thanks to reduced distribution congestion.
- **Avoided Carbon Costs-** While Duke plans around the cost and intensity of carbon emissions when conducting system resource planning within its IRP, its proposed NEM fails to properly account for the benefits in reducing these costs provided by customer-owned renewable generation. Duke's consideration of future climate legislation in its IRP shows that avoiding carbon emissions is a consideration that affects resource procurement and environmental compliance plans.⁴ Additionally, Governor Cooper's Executive Order No. 246 (issued in January, 2022), states that North Carolina will need to achieve net-zero emissions no later than 2050. Devaluing solar through the proposed net metering changes will weaken a critical renewable energy element needed to meet the Executive Order's requirement. This is a particularly important consideration given the recent Environmental Defense Fund analysis which found that under existing state policies, North Carolina is set to miss greenhouse gas reduction targets set for 2025 and 2030.⁵

⁴ See Duke Energy Carolinas 2020 IRP at 5. https://desitecoreprod-cd.azureedge.net/_/media/pdfs/our-company/irp/202296/dec-2020-irp-full-plan.pdf?la=en&rev=f907071cc4dc4651b25ab93ca6f3d8f0

⁵ North Carolina Greenhouse Gas Emissions Inventory (January 2022) <https://deq.nc.gov/media/27070/download?attachment>

- **Environmental Compliance-** Similar to its considerations for carbon pricing, Duke considers the costs of compliance with federal and state environmental regulations when conducting system resource planning in its IRP. The Commission should include an avoided environmental compliance cost estimate within its export rate.
- **Jobs Benefits-** The rooftop solar industry in North Carolina currently employs thousands of people and is on pace to add thousands more jobs over the next five years. The proposed changes to net metering would halt solar's growth and eliminate thousands of local, well-paid, and skilled jobs that provide full time benefits to North Carolinians. Without these opportunities, many passionate, experienced, and valuable North Carolina solar workers may leave for other states. The export rate should recognize the need to retain these jobs, these workers, and their expertise. Duke has previously proposed, and received Commission approval for, economic development rates based on a customers' contribution to employment in the State. (See Duke's Economic Development Rider and Economic Redevelopment Rider). The same rationale that supports Duke's EDR and RDR rates applies equally to the rooftop solar industry.

While the Kentucky Commission did not assign a value to the jobs benefits category because of a lack of evidence on that issue, that Commission assigned a per kWh avoided cost value to all other categories discussed above and determined an export credit rate of \$0.09746 for AEP (Kentucky Power Co.)⁶ and a credit of \$0.06924 for Louisville Gas & Electric Company (LG&E)⁷ and \$0.07366 for Kentucky Utilities Company (KU).⁸ These rates are significantly higher than the \$0.0268/kWh export rate proposed by Duke.

To be clear, NCRSI is not proposing that the Commission adopt the rates established by the Kentucky Commission shown above. But the Commission should consider the same, and perhaps other, factors when setting NEM rates rather than setting the export rate equal to the current avoided cost rate for QFs as proposed by Duke.

⁶ Kentucky Public Service Commission; Case No. 2020-00174, Order (May 12, 2021) at 39-40.

⁷ Kentucky Public Service Commission; Case No. 2020-00349 and 350, Order (September 24, 2021) at 58.

⁸ Id.

v. Duke's Proposal To Charge Solar Customers A Higher Facilities Charge Than Other Residential Customers May Be Discriminatory.

Duke proposes to implement monthly minimum bills of \$22 for DEC solar customers and \$28 for DEP solar customers.⁹ The NEM Tariffs also incorporate a monthly grid access fee ("GAF") for facilities with a capacity greater than 15 kW-dc and additional non-bypassable charges for solar customers.¹⁰ NCRSI is concerned that Duke's proposal will levy additional fixed charges on solar customers that are not applied to other residential customer bills.

Solar energy consumed on site represents a reduction of consumption that is very similar to other energy efficiency measures. It is not appropriate to single out one category of residential customers that are reducing their own energy and demand through solar while not applying the same charges to other customers who may also be actively pursuing energy efficiency measures. These include, but are not limited to, insulation improvements, installing high efficiency HVAC units, transitioning from electric to wood, natural gas, heat pump technology etc. All energy efficiency measures reduce the amount of energy utilized from the grid in relation to the monthly service fee charged by utilities. Non-bypassable residential charges are designed to account for a variety of circumstances and are averaged over the entire customer class. Solar customers should not be singled out to pay higher facilities charges because of the type of technology that they choose to use to reduce their consumption.

This issue is currently being litigated with respect to Salt River Projects' ("SRP"), an electric utility operated as an agency of the State of Arizona, imposition of higher non-bypassable charges on residential customers with solar than residential customers

⁹ Joint Application at 14.

¹⁰ Id. at 14-15.

without solar.¹¹ In that case, the 9th Circuit Court of Appeals concluded that there is sufficient evidence to show that SRP's rates were designed to deter the competitive threat of solar energy systems and force consumers to exclusively purchase electricity from SRP.¹² Although the circumstances of the SRP case are different because its rates are not set by a public utilities commission, the principle is the same. Utilities risk violating anti-discrimination laws, such as N.C.G.S. § 62-140, by imposing higher fixed costs on solar customers than on other residential customers.

RECOMMENDATION

For the reasons stated above, NCRSI respectfully requests that the Commission not approve the NEM Tariffs as proposed by DEC and DEP. It is not prudent for the Commission to lock in the NEM Tariffs for the next 10 years without a comprehensive, independent review and without the ability to adjust for changes in technology and regulations. This is especially true for a solar industry that is still implementing new technologies and will play a large part in addressing North Carolina's carbon reduction goals. NCRSI recommends that the Commission initiate an independent study of net metering before establishing Duke's NEM Tariffs; or in the alternative establish a procedure for effected customers to propose changes to net metering rates including working directly with Duke and the Commission to resolve concerns.

¹¹ *Ellis v. Salt River Project*, United States Court Of Appeals For The Ninth Circuit (2022). <https://cdn.ca9.uscourts.gov/datastore/opinions/2022/01/31/20-15301.pdf>

¹² The case has been remanded back to the trial court to determine the extent of the utility's conduct and the damages to SRP customers.

DATED this 29th day of March, 2022.

/s/ Kurt J. Boehm

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ROOFTOP SOLAR INSTALLERS**

CERTIFICATE OF SERVICE

I certify that a copy of the Comments of the North Carolina Rooftop Solar Installers' in Docket No. E-100, SUB 180 has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1st Class Postage Prepaid, properly addressed to parties of record.

This, the 29th day of March, 2022

/s/ Kurt J. Boehm

Kurt J. Boehm, Esq.

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