

STATE OF NORTH CAROLINA  
UTILITIES COMMISSION  
RALEIGH

DOCKET NO. E-100, SUB 180

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of:	)	<u>JOINT BRIEF OF EWG,</u>
Investigation of Proposed Net Metering	)	<u>NC WARN, NCCSC, SUNRISE</u>
Policy Changes	)	<u>DURHAM, 350 TRIANGLE, 350</u>
	)	<u>CHARLOTTE, NC APPPL,</u>
	)	<u>AND OULMAN</u>

Pursuant to the North Carolina Utilities Commission’s (“NCUC” or “Commission”) *Order Denying Joint Motion for an Evidentiary Hearing and Requiring the Filing of Proposed Orders and Briefs* entered on November 8, 2022, as extended by the Commission’s Orders of December 1, 2022 and December 7, 2022, in the above-referenced docket, Intervenor Environmental Working Group (“EWG”), NC WARN, North Carolina Climate Solutions Coalition (“NCCSC”), Sunrise Movement Durham Hub (“Sunrise Durham”), 350 Triangle, 350 Charlotte, the North Carolina Alliance to Protect Our People and the Places We Live (“NC APPPL”), through undersigned counsel, and *pro se* intervenor Donald E. Oulman (“Oulman”) (collectively, “Joint Intervenor”), hereby submit the following Joint Brief:

**SUMMARY**

Collectively, Joint Intervenor have submitted over two-hundred (200) pages of comments and eight (8) separate subject-matter expert reports in the above-captioned matter concerning the numerous material errors with the net energy metering (“NEM”) tariffs proposed by Duke Energy Carolinas, LLC (“DEC”)

and Duke Energy Progress, LLC (“DEP”) (collectively, the “Companies”). In very broad terms, the Joint Intervenors’ prior comments consist of the following:

- Initial Comments of EWG, filed on March 29, 2022, supported by two subject-matter expert reports: (a) Karl Rábago, *Review of Duke NEM Rate Revision Proposal and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation*, and (b) Grant Smith, *Duke Energy’s Role in Utility Efforts to Limit Customer Choice and Customer-Owned Behind-the-Meter Solar*;
- Reply Comments of EWG, filed on May 12, 2022, supported by a new report by Karl Rábago, entitled *Review of the Public Staff Comments and Recommendations Regarding NEM Rate Revision Application*;
- Surreply Comments of EWG, filed on May 27, 2022, supported by a third report by Karl Rábago, entitled *Review of the Companies’ Reply Comments and Recommendations Regarding NEM Tariff Revision Application*;
- Joint Initial Comments of NC WARN, NCCSC and Sunrise Durham (collectively, “NC WARN *et al.*”), filed on March 29, 2022, supported by three separate reports by subject-matter expert William E. Powers: (a) *Report Responding to Deficiencies in the Duke Energy NEM Application*, (b) *Deployment of NEM Solar Allows Duke Energy to Eliminate New Transmission That Would Otherwise Be Built*, and (c) *Substitution of Residential NEM Solar for New Transmission Built to Serve Remote Utility-Scale Solar in North Carolina Could Add \$1,600/yr in Avoided Transmission Value to these NEM Systems*;

- Joint Reply Comments of NC WARN *et al.*, filed on May 12, 2022, supported by a new report by William E. Powers, entitled *Report Responding to the Initial Comments of the Public Staff and NCSEA et al.*;
- Joint Surreply Comments of NC WARN *et al.*, filed on May 27, 2022;
- Joint Initial Comments of 350 Triangle, 350 Charlotte, and NC APPPL, filed on March 29, 2022;
- Joint Reply Comments of 350 Triangle, 350 Charlotte, and NC APPPL, filed on May 12, 2022;
- Initial Comments of Oulman, filed on March 28, 2022; and
- Responsive Comments of Oulman, filed on May 27, 2022.

Joint Intervenors refer the Commission to these comments, which provide detailed discussions, supported by reports of subject-matter experts, of the legal and analytical defects with the Companies' proposed NEM tariffs. The present Joint Brief attempts to reduce the details set forth in Joint Intervenors' prior comments and expert reports into a "closing argument" concerning the need to deny the Companies' Joint Application for Approval of NEM Tariffs (the "Joint Application") and order a Commission-led cost-benefit analysis of NEM generation, including a Value of Solar Study.

In summary, the present Joint Brief establishes that the Commission should reject the Companies' proposed NEM tariffs and instead conduct a Commission-led cost-benefit analysis, including a Value of Solar Study, because:

- House Bill 589 sets forth a requirement that the Commission perform an investigation of the costs and benefits of customer-sited generation, including

NEM. As stated by the chief author of House Bill 589, Rep. John Szoka (R-Cumberland), “We’re not putting the fox in charge of the hen house.”

- In contradiction of the requirements of House Bill 589, the Companies would have this Commission impose a new NEM tariff based upon an in-house Embedded and Marginal Cost Study. This is precisely the type of one-sided study prohibited by House Bill 589, which requires an “investigation.”

- In fact, the Companies’ Embedded and Marginal Cost Study is erroneous for numerous reasons. For instance, the Companies’ study departs in several material respects from the applicable standard of care set forth in the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources. In fact, this Joint Brief discusses numerous benefits of NEM solar which the Companies have completely failed to analyze, including but not limited to market price reduction, avoided renewables procurement, avoided CO2 emissions, avoided fuel hedging, and others.

- The Public Utility Regulatory Policies Act prohibits the unjust, unreasonable and discriminatory rates upon Qualifying Facilities that would result from the Companies’ proposed NEM Tariffs.

- For instance, the Companies’ Joint Application is based upon averaged data from hundreds of customer-generators, but the Joint Application does not specifically analyze the cost to serve **NEM customers** and is therefore not based upon accurate data. Therefore, the proposed NEM tariffs, if approved, would violate the Public Utility Regulatory Policies Act.

- Furthermore, the proposed tariffs discriminate against NEM customers by forcing NEM customers to pay more for electricity than other non-NEM customers who import the same amount of grid-supplied electricity. This discrimination against rooftop solar customers would violate the Public Utility Regulatory Policies Act.

- The proposed NEM tariffs are also unreasonable and unjust. In the context of mandatory carbon emission reductions required by House Bill 951, the Companies' proposed tariffs would reduce the economic value of rooftop solar systems by as much as thirty-one percent (31%). Furthermore, the proposed tariffs are unreasonably complex and unjustly impact legacy customers.

For these reasons, and others, the Companies' Joint Application should be rejected. Contemporaneous with the present Joint Brief, the Joint Intervenors are filing a proposed Order which would reject the Companies' proposed NEM tariffs and initiate a Commission-led cost-benefit analysis of NEM solar, including a Value of Solar Study.

### **ARGUMENT**

I. **The Statutorily Mandated "Investigation" of Rooftop Solar Has Not Been Conducted, and Therefore, the Commission Should Conduct a Cost-Benefit Analysis, Including a Value of Solar Study.**

House Bill 589 requires a Commission-led cost-benefit analysis of rooftop solar. Instead, the Companies have proposed new NEM tariffs based upon their in-house Embedded and Marginal **Cost** Study and a superficial stakeholder process. These breezy undertakings do not satisfy the requirement of an "investigation," and therefore, the Joint Application should be denied and the

Commission should perform a cost-benefit analysis that includes a Value of Solar Study.

A. House Bill 589 Requires a Commission-Led Cost-Benefit Analysis

House Bill 589 prohibits the establishment of new NEM tariffs until after a Commission-led cost-benefit analysis is conducted regarding customer-sited generation. The applicable statute states:<sup>1</sup>

**§ 62-126.4. Commission to establish net metering rates.**

. . . .

(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. . . .

The key language is that “an investigation of the costs and benefits of customer-sited generation” shall be conducted.

Both the legislative intent and plain language of this statute require that the **Commission** lead an independent cost-benefit analysis into customer-sited generation. The chief author of House Bill 589, Rep. John Szoka (R-Cumberland), was interviewed and characterized as follows in an article appearing in *Energy News Network*:

**Szoka is adamant the Commission will conduct the cost-benefit study.**

“It’s not up to the utility to determine whether net metering is good or bad,” he said. “We know what that

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<sup>1</sup> N.C. Gen. Stat. § 62-126.4(b) (second emphasis added).

answer will be. We're not putting the fox in charge of the hen house here. That is not the intent.”<sup>2</sup>

The Companies have not grappled with—or addressed in any way—the legislative intent behind House Bill 589. Nor could they: the General Assembly clearly intended that “the fox” would not be placed “in charge of the hen house.”

Indeed, nearly every aspect of this statute requires that the **Commission**, not the Companies, take lead on the establishment of new NEM tariffs. For instance, the title of the statute is, “**Commission** to establish net metering rates.”<sup>3</sup> Subsection (a) of the statute states that “**Commission** approval” is required.<sup>4</sup> Subsection (b) states that “[t]he **Commission** shall establish net metering rates.”<sup>5</sup> In other words, the Commission is the prime mover regarding the establishment of new NEM tariffs, and the Commission should therefore lead the mandatory cost-benefit analysis. In fact, it is common for state utility commissions to lead investigations into the costs and benefits of NEM solar.<sup>6</sup>

The words “investigate” and “investigation” are used repeatedly throughout the Public Utilities Act (the “Act”), and in each instance, it is clear that the investigating authority is a third party such as the Commission or the Public Staff.

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<sup>2</sup> Elizabeth Ouzts, *Energy News Network*, “Energy Bill could see North Carolina join national fight over net metering,” July 17, 2017, <https://energynews.us/2017/07/17/energy-bill-could-see-north-carolina-join-national-fight-over-net-metering/> (accessed on March 22, 2022) (emphasis added).

<sup>3</sup> N.C. Gen. Stat. § 62-126.4 (emphasis added).

<sup>4</sup> *Id.* § 62-126.4(a) (emphasis added).

<sup>5</sup> *Id.* § 62-126.4(b) (emphasis added).

<sup>6</sup> NC WARN *et al.*'s Initial Comments, Att. A, Powers' Report, p. 23; see also CPUC, *California Net Energy Metering Ratepayer Impacts Evaluation*, prepared by Energy+Environmental Economics (E3), October 2013; CPUC, *Net-Energy Metering 2.0 Lookback Study*, prepared by Verdant Associates, LLC, January 21, 2021.

For instance, the Act provides that “[t]he Commission shall from time to time visit the places of business and investigate the books and papers of all public utilities,”<sup>7</sup> and furthermore, the Act empowers the Commission to “investigate and examine the condition and management of public utilities.”<sup>8</sup> An important principle of construction is that, in general, statutory provisions “must be construed consistently with other provisions of the” same statutory act.<sup>9</sup> Consistent with the remainder of the Act, the word “investigation” in House Bill 589 should be interpreted as requiring that the Commission conduct the investigation.

It is difficult to believe that the General Assembly, in selecting the word “investigation,” intended for the Companies to investigate themselves via an in-house Embedded and Marginal Cost Study. Obviously, the Companies would have an unconscious bias toward minimizing the benefits and amplifying the costs of rooftop solar. The word “investigation,” given its natural, plain meaning, indicates that the investigation should be performed by a third party, namely the Commission. As stated by the chief author of House Bill 589, Rep. Szoka, “putting the fox in charge of the hen house” was “not the intent.”

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<sup>7</sup> N.C. Gen. Stat. § 62-34(a).

<sup>8</sup> N.C. Gen. Stat. § 62-37(a).

<sup>9</sup> *Jackson v. Charlotte Mecklenburg Hosp. Auth.*, 238 N.C. App. 351, 358, 768 S.E.2d 23, 28 (2014) (“Further, N.C. Gen. Stat. § 132-1.3 must be construed consistently with other provisions of the Public Records Act.” (quoting *Rhyne v. K-Mart Corp.*, 358 N.C. 160, 188, 594 S.E.2d 1, 20 (2004) (holding that “this Court does not read segments of a statute in isolation”; “[r]ather, we construe statutes *in pari materia*, giving effect, if possible, to every provision”))).



B. The Rate Design Stakeholder Process Cannot Satisfy the Requirement of an “Investigation” of Rooftop Solar.

In their Reply Comments,<sup>10</sup> the Companies claimed that the NEM portion of the Rate Design Study stakeholder process satisfied the requirement of an “investigation of the costs and benefits of customer-sited generation.”<sup>11</sup> The Companies’ argument was addressed and rejected by the following eleven (11) intervenors to the present docket:

- The Attorney General’s Office (the “AGO”);<sup>12</sup>
- 350 Triangle, 350 Charlotte, and NC APPPL;<sup>13</sup>
- Sundance Power Systems, Inc., Southern Energy Management, Inc., and Yes Solar Solutions (collectively, the “Rooftop Installers”);<sup>14</sup>
- the EWG;<sup>15</sup> and
- NC WARN, NCCSC and Sunrise Durham.<sup>16</sup>

As aptly stated by the AGO, “While the Comprehensive Rate Design Study investigated the costs of customer-sited generation, **it did not analyze potential benefits of customer-sited generation.**”<sup>17</sup> Even NCSEA *et al.*, while parties to a

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<sup>10</sup> *E.g.*, the Companies’ Reply Comments, p. 2.

<sup>11</sup> N.C. Gen. Stat. § 62-126.4(b).

<sup>12</sup> The AGO’s Initial Comments, p. 1 (“The AGO believes that it would be prudent for the Commission to delay reaching a decision on these revised [NEM] rates until a **sufficient investigation** has been done regarding the costs and benefits of customer-sited generation—an investigation that may not be possible until later in the Carbon Plan process.” (emphasis added)).

<sup>13</sup> 350 Triangle *et al.*’s Initial Comments, p. 4.

<sup>14</sup> The Rooftop Installers’ Initial Comments, pp. 1-3.

<sup>15</sup> The EWG’s Initial Comments, pp. 8-11.

<sup>16</sup> NC WARN *et al.*’s Initial Comments, pp. 17-22; *see also* NC WARN *et al.*’s Reply Comments, pp. 5-7.

<sup>17</sup> The AGO’s Initial Comments, pp. 3-4 (emphasis added).

Memorandum of Understanding with the Companies, have stated that “SACE, Vote Solar, and NCSEA have no objection to further study of the benefits and costs of rooftop solar.”<sup>18</sup>

In the face of widespread agreement that an informal stakeholder process cannot meet the definition of “investigation” and that more study is needed, the Companies’ Reply Comments mounted several failed defenses of the Rate Design Study. For instance, the Companies stated:

While the discussion of Fast Track topics might be considered sooner than other topics, **there was no set end date or abbreviated timeline** for these conversations. The Fast Track designation simply reflects the priority of consideration, **not a truncated timeline**.<sup>19</sup>

The Companies’ characterization of the Rate Design Study is inaccurate. For instance, on June 4, 2021, the Companies sent all participants of the Rate Design Study an email describing the “Fast Track” working group, which included NEM, as follows: “Topics discussed in the Fast Track Working Group are ones that may be **developed and implemented on an accelerated timetable**.”<sup>20</sup>

In light of this email, it is difficult to understand the Companies’ new position that the Rate Design Study was somehow “not [on] a truncated timeline.” In fact, both NC WARN and Appalachian Voices repeatedly expressed concerns to the Companies and the third-party facilitator about the accelerated timeframe for NEM

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<sup>18</sup> NCSEA *et al.*’s Reply Comments, p. 3.

<sup>19</sup> The Companies’ Reply Comments, p. 2 (emphasis added).

<sup>20</sup> NC WARN *et al.*’s Surreply Comments, Att. A, Email from the Companies on June 4, 2021, p. 1 (emphasis added).

discussions during the Rate Design Study.<sup>21</sup> Despite these complaints, the NEM topic was subject to discussion over a mere six (6) weeks. For comparison purposes, the electric vehicles (“EV”) component of the Rate Design Study was also part of the Fast Track working group<sup>22</sup> yet lasted for nearly two (2) years.<sup>23</sup>

In their Reply Comments, the Companies touted the supposedly extensive dissemination of data during the Rate Design Study. To the contrary, the NEM portion of the Rate Design Study was plagued by untimely and half-hearted sharing of information. By way of example, the slide-deck used during the meeting on July 22, 2021, which was shared at 3:47 pm on the afternoon before the meeting, contained substantive information designed by the Companies to encourage adoption of their preferred TOU windows applicable to the proposed NEM tariff. This late disclosure made it impossible to prepare for discussions to be held the very next day (*i.e.*, July 22, 2021). During the Rate Design Stakeholder Process, NC WARN and Appalachian Voices made a joint filing notifying the Commission of these issues, in which they provided a detailed chronology which proves that substantive information was provided in a manner which discouraged discussion.<sup>24</sup>

The Companies’ Reply Comments accused NC WARN of squandering an opportunity to engage in a substantive policy discussion on NEM during the Rate

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<sup>21</sup> *Id.* at Att. B, NC WARN’s PowerPoint Presentation During Rate Design Study, p. 3.

<sup>22</sup> *Id.* at Att. A, Email from the Companies, June 4, 2021.

<sup>23</sup> NCUC Docket Nos. E-2, Sub 1197 and E-7, Sub 1195.

<sup>24</sup> *NC WARN and Appalachian Voices’ Response to Duke Energy’s Rate Design Study Quarterly Status Report for Third Quarter, 2021*, NCUC Docket Nos. E-7, Sub 1214 & E-2, Sub 1219, pp. 8-13, November 15, 2021.

Design Study.<sup>25</sup> To the contrary, the record shows that NC WARN provided constructive feedback about the Minimum Monthly Bill,<sup>26</sup> the TOU windows,<sup>27</sup> the need for a battery storage provision,<sup>28</sup> the need for accommodation of low-income customers,<sup>29</sup> and other substantive feedback. NC WARN returned to these themes repeatedly throughout the Rate Design Study, but the Companies were unmoved.

The Companies' Reply Comments give the impression that the Rate Design Study was a substantive discussion which evaluated costs and benefits and thereby resulted in a compromise NEM proposal for North Carolina.<sup>30</sup> The evidence shows otherwise. As the Commission is aware, the Rate Design Study occurred after the South Carolina Public Service Commission approved a Memorandum of Understanding governing the Companies' NEM tariffs in South Carolina. If the Rate Design Study was a genuine "investigation," one would expect some changes to the South Carolina model. To the contrary, there is no material difference between the NEM proposal set forth in the South Carolina Memorandum of Understanding and the NEM proposal arising out of the Rate Design Study.<sup>31</sup> Instead, the Rate Design Study was simply the Companies' attempt to convince

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<sup>25</sup> The Companies' Reply Comments, p. 29 (characterizing NC WARN

<sup>26</sup> NC WARN *et al.*'s Surreply Comments, Att. B, NC WARN's PowerPoint Presentation During Rate Design Study, p. 5.

<sup>27</sup> *Id.* at 8.

<sup>28</sup> *Id.* at 10.

<sup>29</sup> *Id.* at 12.

<sup>30</sup> *E.g.*, the Companies Reply Comments, p. 13 ("The Rate Design Study Revealed the Potential for NEM Customer to Pay Less Than Their Full Fixed Cost of Service . . .").

<sup>31</sup> NC WARN *et al.*'s Surreply Comments, Att. C, the Companies' Response to NC WARN's Data Request No. 2-2.

attendees of the supposed reasonableness of adopting the South Carolina approach in North Carolina.

There is widespread agreement in this docket that the Rate Design Study was not a meaningful “investigation,” and Joint Intervenors urge the Commission to disregard any notion that the Rate Design Study meaningfully investigated “the costs and benefits of customer-sited generation.”<sup>32</sup>

C. There Is Sufficient Time to Conduct the Statutorily Mandated “Investigation.”

Importantly, there is no rush—there is time for the statutorily mandated investigation. The Companies’ ambitious request for a new NEM tariff by January 1, 2023<sup>33</sup> is completely arbitrary and not required by House Bill 589 or any other law. The applicable statute, N.C. Gen. Stat. § 62-126.4(c), provides no deadline for the implementation of new NEM tariffs. To the contrary, that statute provides that retail customers may “continue net metering under the net metering rate in effect at the time of interconnection until January 1, 2027,”<sup>34</sup> and the statute does not preclude existing NEM customers from remaining on their current tariff beyond January 1, 2027. Given that NEM customers have a statutory right to retain their current tariff until January 1, 2027, there is ample time for a meaningful investigation of the costs and benefits of rooftop solar.

NCSEA *et al.*’s Reply Comments encouraged haste because “the current residential rooftop solar rebate program authorized under the 2017 energy

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<sup>32</sup> N.C. Gen. Stat. § 62-126.4(b).

<sup>33</sup> The Companies’ Joint Application, pp. 1-2.

<sup>34</sup> N.C. Gen. Stat. § 62-126.4(c).

legislation (HB 589) concludes at the end of 2022” (the “NC solar rebate”).<sup>35</sup> This concern should be disregarded. As the Commission is aware, the NC solar rebate program operates under a highly competitive lottery system, and the vast majority of rooftop solar customers will not receive the NC solar rebate.<sup>36</sup> Notably, in their Initial Comments, the Rooftop Installers called upon the Commission to “initiate an independent study of net metering before establishing Duke’s NEM Tariffs,”<sup>37</sup> yet the Rooftop Installers expressed no concern whatsoever about the expiration of the NC solar rebate. In fact, one of the Rooftop Installers, namely Southern Energy Management, indicates on its website that the NC solar rebate is so uncertain that it is not used in cost-savings projections for potential customers: “Because the rebate cannot be guaranteed, Southern Energy Management will default to not including the rebate in your solar savings analysis.”<sup>38</sup>

Accordingly, there is ample time for a meaningful investigation of the costs and benefits of rooftop solar.

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<sup>35</sup> NCSEA *et al.*’s Reply Comments, p. 2.

<sup>36</sup> For instance, Southern Energy Management’s website characterizes the NC solar rebate as “Very Competitive” for residential customers and “Extremely Competitive” for commercial customers. See Southern Energy Management’s Website, *NC Solar Rebate Program 2022*, <https://southern-energy.com/nc-solar-rebate/> (accessed on May 25, 2022). Similarly, Yes Solar Solutions’ website states that “the Duke Solar Rebate can be somewhat difficult, especially since applications often reach the program capacity limits quickly . . . .” Yes Solar Solutions’ Website, *Duke Solar Rebate Application Opens*, <https://yessolarsolutions.com/how-to-apply-for-the-duke-energy-solar-rebate/> (accessed on May 25, 2022).

<sup>37</sup> Rooftop Installers’ Initial Comments, p. 12.

<sup>38</sup> Southern Energy Management’s Website, *NC Solar Rebate Program 2022*, <https://southern-energy.com/nc-solar-rebate/> (accessed on May 25, 2022).

II. **House Bill 589 Prohibits the Companies’ “One Size Fits All” Approach to NEM.**

The Companies have proposed a “one size fits all” approach to NEM. For instance, the Companies’ Joint Application would force all residential NEM customers onto a Time-of-Use (“TOU”) rate with Critical Peak Pricing (“CPP”), thereby eliminating all flat-rate NEM customers.<sup>39</sup> As discussed in NC WARN *et al.*’s Initial Comments, this “one size fits all” approach is particularly noxious given that the Companies’ TOU rate structure is terribly disadvantageous to rooftop solar *and* unsupported by the evidence.<sup>40</sup> Importantly, this Commission has previously held that “the requirement that customer-generators switch to a TOU-demand rate is a deterrent and has actually inhibited the installation of renewable generation.”<sup>41</sup>

This uniform approach to NEM reform violates House Bill 589, which explicitly requires that the “Commission shall establish net metering rates **under all tariff designs**.”<sup>42</sup> Since residential customers are now served under a flat-rate tariff, the Companies are statutorily mandated to provide a NEM option for that tariff. The Companies’ effort to eliminate an entire class of customers—namely, flat-rate NEM customers—violates this mandate of House Bill 589.

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<sup>39</sup> For instance, DEC’s proposed Residential Solar Choice rider states that “Customers receiving service under this Rider must be served under a residential rate schedule with time of use (TOU) and critical peak pricing (CPP) . . . .” Joint Application of DEC & DEP for Approval of NEM Tariffs, NCUC Docket No. E-100, Sub 180, Ex. No. 1, pdf p. 30.

<sup>40</sup> See *also* NC WARN *et al.*’s Initial Comments, pp. 32-36.

<sup>41</sup> Order Amending Net Metering Policy, NCUC Docket No. E-100, Sub 83, pdf p. 12, March 31, 2009.

<sup>42</sup> N.C. Gen. Stat. § 62-126.4(b) (emphasis added).

In their Reply Comments, the Companies provide the following defense of their “one size fits all” NEM tariff proposal:

H.B. 589 mandates that “[t]he 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.” N.C.G.S. § 62-126.4(b). The plain language of this provision ensures that each tariff established by the Commission pursuant to H.B. 589 achieves the primary goal of NEM reform thereunder—reducing the cross-subsidy by ensuring each customer “pays its full fixed cost of service.”<sup>43</sup>

At the outset, it should be noted that the Companies inaccurately summarized N.C. Gen. Stat. § 62-126.4(b). Contrary to the Companies’ above-quoted summary, that statute does **not** say “each tariff established by the Commission pursuant to H.B. 589.”<sup>44</sup> The statute actually says, “**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.”<sup>45</sup> The statute is clearly mandating that a NEM rate be established for “all tariff designs.” If the Companies were correct that the General Assembly merely required that customers pay their cost-of-service for any NEM rate adopted pursuant to House Bill 589, then the Commission could comply with the statute by simply taking no action at all. Surely that is not what the statute was designed to allow.

In fact, the Companies’ argument boils down to the following: the words “pays its full fixed cost of service” somehow overshadow or eliminate the words “under all tariff designs.” The Companies’ argument is erroneous as a matter of

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<sup>43</sup> The Companies’ Reply Comments, p. 35.

<sup>44</sup> *Id.*

<sup>45</sup> N.C. Gen. Stat. § 62-126.4(b) (emphasis added).



law. If the General Assembly wanted N.C. Gen. Stat. § 62-126.4(b) to merely require all NEM customers to pay their full fixed cost of service, the General Assembly could have easily accomplished this purpose without including the words “under all tariff designs.” To illustrate this point, here is what the pertinent statutory provision would state if the words “under all tariff designs” were excised:

The Commission shall establish net metering rates [excised words here] that ensure that the net metering retail customer pays its full fixed cost of service.

The only difference between the actual statute and the above hypothetical sentence is the removal of the words “under all tariff designs,” yet the above hypothetical sentence has the exact same meaning being proposed by the Companies.

But that is **not** what the statute states. Instead, the pertinent statute, N.C. Gen. Stat. § 62-126.4(b), states as follows:

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.<sup>46</sup>

In other words, the Companies’ recommended interpretation of House Bill 589 reads the words “under all tariff designs” right out of the statute. In so doing, the Companies have violated a cardinal rule of statutory construction: “it is a fundamental principle of statutory interpretation that courts should evaluate a

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<sup>46</sup> N.C. Gen. Stat. § 62-126.4(b) (emphasis added).

statute as a whole and . . . not construe an individual section in a manner that renders another provision of the same statute meaningless.”<sup>47</sup>

Under the Companies’ proffered interpretation of N.C. Gen. Stat. § 62-126.4(b), the words “under all tariff designs” have no meaning whatsoever. Hence, as a matter of law, the Companies’ position should be rejected. As required by mandatory principles of statutory construction, the Commission should give meaning to every word of the statute, including the requirement that the “Commission shall establish net metering rates under all tariff designs.”

The Companies and the Rooftop Installers, on May 19, 2022, proposed a non-binding “Stipulation” which included a “Bridge Rate” for flat-rate customers. This Bridge Rate does not save the proposed NEM tariffs. To the contrary, the Bridge Rate involves a short-term 4-year eligibility period and imposes annual participation caps.<sup>48</sup> Further, the Bridge Rate largely terminates if the Smart Saver incentive is approved by the Commission.<sup>49</sup> Hence, the Bridge Rate is both temporary and conditional and is therefore completely insignificant in comparison to the long-term 10-year NEM tariffs proposed in the Companies’ Joint Application.<sup>50</sup>

House Bill 589, properly interpreted, prohibits the Companies’ proposal to force all customers onto a TOU rate structure with CPP. Hence the Companies

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<sup>47</sup> *Lunsford v. Mills*, 367 N.C. 618, 628, 766 S.E.2d 297, 304 (2014) (internal quotation marks omitted).

<sup>48</sup> Stipulation, ¶¶ 7, 10.

<sup>49</sup> *Id.* ¶ 13.

<sup>50</sup> The Companies’ Joint Application, p. 13.

should be required to propose a NEM arrangement for “all tariff designs,” including flat rate customers.

**III. The Companies’ Embedded and Marginal Cost Study Violates the Applicable Standard of Care for Cost-Benefit Analyses and Is Otherwise Flawed.**

The centerpiece of the Companies’ evidentiary support for their proposed NEM tariffs is an in-house, one-sided, deeply flawed Embedded and Marginal Cost Study. There is a generally recognized standard of care for the performance of cost-benefit analyses of distributed energy resources, and the Companies’ Embedded and Marginal Cost Study falls far short of that standard. In fact, the Companies have altogether ignored numerous benefits of rooftop solar, and the Companies have made other analytical errors in analysis of whether there is a cost-shift from NEM customers. Properly analyzed, the evidence shows that NEM customers are a net benefit to the system. For these reasons and others, the Companies’ Embedded and Marginal Cost Study should be rejected—and therefore, the Joint Application should be denied.

**A. The Applicable Standard of Care Requires Compliance with the NSPM-DER, Including Consideration of the Societal Benefits of Rooftop Solar.**

In this proceeding, the EWG sponsored subject-matter expert Karl Rábago (“Mr. Rábago”), a nationally recognized expert in electric utility regulation, operations and rate making, and the co-author of the *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources* (“NSPM-DER”). According to Mr. Rábago, the NSPM-DER “compiled best practices guidance through an intentionally inclusive process of drafting, commenting, and revising

supported by a range of authors and reviewers.”<sup>51</sup> The NSPM-DER involved “decades of work invested in sound BCA [*i.e.*, benefit-cost analysis]” which “yielded a consensus among leading practitioners as to the elements of best-practices BCAs.”<sup>52</sup> The resulting document “sets out detailed guidance for establishing a benefit-cost analysis framework that can support jurisdictionally-specific evaluations of all manner of distributed energy resources.”<sup>53</sup>

Similarly, NC WARN *et al.*’s subject-matter expert, William E. Powers (“Mr. Powers”), authored a report in this docket stating that, “[i]t is this Manual [*i.e.*, the NSPM-DER] that should be utilized by the Commission to evaluate the costs and benefits of NEM solar.”<sup>54</sup> In summary, the NSPM-DER represents the standard of care for conducting cost-benefit analyses of distributed generation, including NEM solar.

Accompanying Mr. Rábago’s initial report in this docket was a Summary of the NSPM-DER,<sup>55</sup> including but not limited to its “guiding principles, the standard five-step process, and impacts to be considered, including utility system, customer, and societal impacts.”<sup>56</sup> Among other things, the NSPM-DER recommends a detailed analysis of benefits, including both customer and societal impacts, during every cost-benefit analysis of NEM solar—*i.e.*, a Value of Solar Study is

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<sup>51</sup> The EWG’s Initial Comments, Att. A, *Review of Duke NEM Rate Revision Proposal and Recommendations for Investigation of Costs and Benefits of Customer-Sited Generation*, at p 3.

<sup>52</sup> *Id.* at 24.

<sup>53</sup> *Id.* at 2.

<sup>54</sup> NC WARN *et al.*’s Initial Comments, Att. A, *Report Responding to Deficiencies in the Duke Energy NEM Application*, at p. 22.

<sup>55</sup> The EWG’s Initial Comments, Att. C.

<sup>56</sup> The EWG’s Initial Comments, Att. A, at p. 25.

recommended by the NSPM-DER. According to the NSPM-DER, at least the following societal issues should be examined: low-income customer non-energy impacts, greenhouse gas emissions, incremental economic development and job impacts, health impacts, energy imports and energy independence, etc.<sup>57</sup>

The need to consider the benefits, including the societal benefits, of rooftop solar—as recommended by the NSPM-DER—is illustrated by examining cost-benefit analyses performed in North Carolina by independent consultants. For instance, on October 18, 2013, R. Thomas Beach (“Mr. Beach”) and Patrick G. McGuire (“Mr. McGuire”) of Crossborder Energy issued a report entitled *The Benefits and Costs of Solar Generation for Electric Ratepayers in North Carolina*.<sup>58</sup> In that study, Mr. Beach and Mr. McGuire performed a detailed analysis of both the costs and value of solar. For instance, the Beach/McGuire study examined factors such as “Avoided Emissions,” environmental issues, and other societal benefits of solar generation.<sup>59</sup> Perhaps unsurprisingly, given that benefits were considered in the South Carolina NEM litigation involving Dominion Energy South Carolina, Mr. Beach, following a cost-benefit analysis similar to that which he conducted in North Carolina, concluded that “there is not presently a cost shift from solar customers to non-participating ratepayers,” and “there are significant, quantifiable societal benefits from distributed solar, including public health benefits

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<sup>57</sup> NSPM-DER Ch. 4.

<sup>58</sup> R. Thomas Beach & Patrick G. McGuire, *The Benefits and Costs of Solar Generation for Electric Ratepayers in North Carolina*, October 18, 2013, at [https://energync.org/wp-content/uploads/2017/03/Benefits\\_Costs\\_Solar\\_Generati-on-for\\_Electric\\_Ratepayers\\_NC.pdf](https://energync.org/wp-content/uploads/2017/03/Benefits_Costs_Solar_Generati-on-for_Electric_Ratepayers_NC.pdf) (accessed on March 22, 2022).

<sup>59</sup> *E.g.*, *id.* at 1 & 3.

from reduced air pollution and from mitigating the damages from carbon emissions.”<sup>60</sup> Notably, NCSEA *et al.* sponsored a report by Mr. Beach and Mr. McGuire in the present docket.<sup>61</sup>

In their Reply Comments, the Companies asserted that it is unnecessary to comply with the NSPM-DER because, supposedly, “that standard has been considered or introduced in 40 states and only been applied in three states.”<sup>62</sup> The Companies’ argument is misplaced for several reasons. First, the current NSPM-DER was promulgated in 2020, and therefore, its quick adoption by three (3) states would be relatively promising. However, the Companies’ tally is inaccurate: in fact, as of November 2022, the NSPM-DER has been adopted by eleven (11) public utility commissions and has been recommended for adoption before thirty-one additional public utility commissions. The following figure from the National Energy Screening Project’s website illustrates the widespread proliferation of the NSPM-DER:<sup>63</sup>

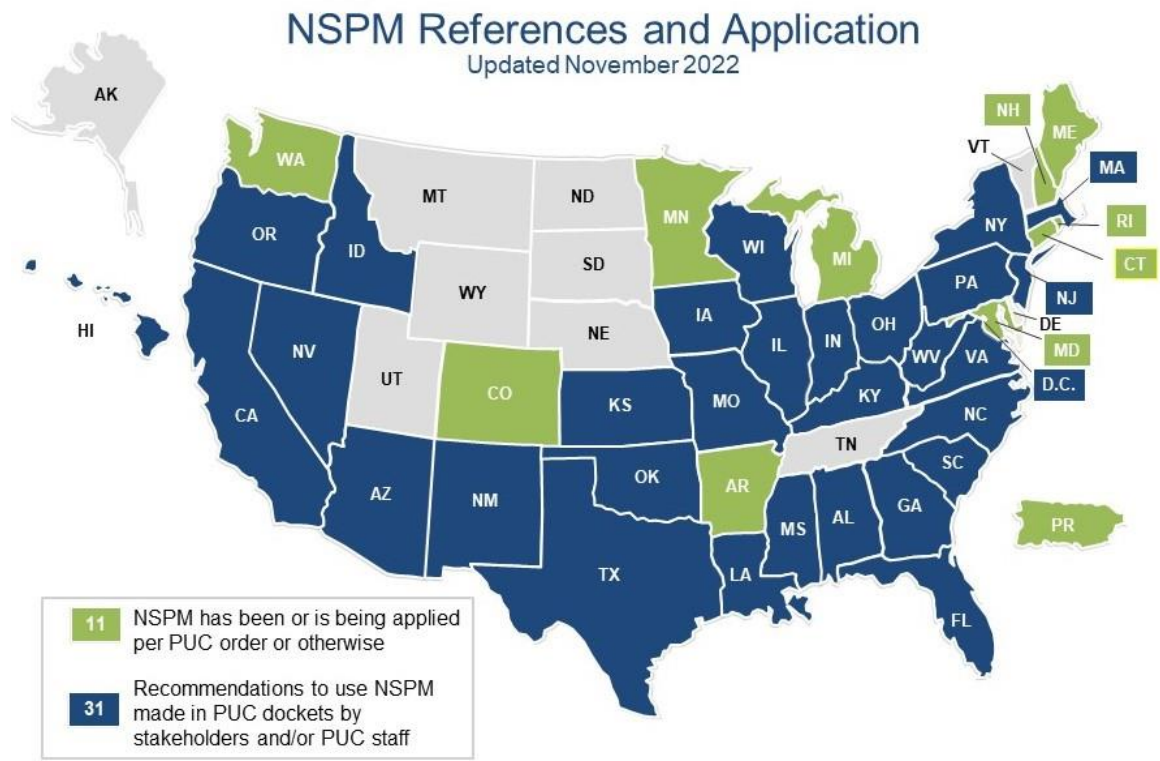
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<sup>60</sup> See PSCSC, Docket No. 2019-182-E, *Rebuttal Testimony of R. Thomas Beach*, October 29, 2020, at p. 2.

<sup>61</sup> NCSEA *et al.*’s Initial Comments, Att. A.

<sup>62</sup> The Companies’ Reply Comments, at p. 9.

<sup>63</sup> NSPM References, at <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/state-references/> (accessed November 23, 2022).



Instead of the NSPM-DER, the Companies advocated use of the principles endorsed by the National Association of Regulatory Utility Commissioners (“NARUC”).<sup>64</sup> However, the NARUC manuals cited by the Companies are approximately thirty (30) years old,<sup>65</sup> pre-date NEM solar, and therefore fail to provide guidance on the suite of beneficial attributes that should be considered in analyzing the costs and benefits of rooftop solar. The better approach is to apply the NSPM-DER, which is the preferred standard and specifically designed for distributed energy resources such as rooftop solar.

<sup>64</sup> The Companies’ Reply Comments, p. 8.  
<sup>65</sup> *Id.* at 8, footnote 6 (*citing* to NARUC manuals promulgated in 1992 and 1994).

In violation of the NSPM-DER,<sup>66</sup> the Companies' Reply Comments urged the Commission to not consider societal benefits.<sup>67</sup> In making this request, the Companies completely ignored the following:

- Governor Cooper's Executive Order No. 246 recommended that the Commission consider the federal social cost of greenhouse gas emissions in its decision-making processes;<sup>68</sup>
- Governor Cooper's Executive Order No. 80 directed the development of a Clean Energy Plan, including certain greenhouse gas emissions reduction goals;<sup>69</sup>
- The Public Utilities Act expressly declares that it is "the policy of the State of North Carolina . . . [t]o encourage and promote harmony between public utilities, their users and **the environment**";<sup>70</sup> and
- House Bill 951 "requires implementation of a carbon emissions reduction plan for the State's public utilities."<sup>71</sup>

Therefore, the NSPM-DER's emphasis upon the societal impacts of NEM solar is consistent with North Carolina public policy.

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<sup>66</sup> NSPM-DER Ch. 4; see also the EWG's Initial Comments, Att. A, Rábago's Report, at p. 25.

<sup>67</sup> The Companies' Reply Comments, at p. 12.

<sup>68</sup> *Executive Order No. 246*, January 7, 2022, p. 3, at <https://governor.nc.gov/media/2907/open> (accessed on May 6, 2022) (emphasis added).

<sup>69</sup> *Executive Order No. 80*, October 29, 2018, at <https://files.nc.gov/governor/documents/files/EO80-%20NC%27s%20Commitment%20to%20Address%20Climate%20Change%20%26%20Transition%20to%20a%20Clean%20Energy%20Economy.pdf> (accessed on March 22, 2022).

<sup>70</sup> N.C. Gen. Stat. § 62-2(a)(5) (emphasis added).

<sup>71</sup> Joint Application, p. 7.



B. The Companies' Embedded and Marginal Cost Study Does Not Meet the Definition of a Cost-Benefit Analysis.

The Companies have not conducted a genuine cost-benefit analysis—much less an analysis consistent with the NSPM-DER. Instead, the Companies are passing off an Embedded and Marginal Cost Study as a “cost-benefit analysis.”<sup>72</sup>

At the outset, it should be noted that the Companies' Embedded and Marginal Cost Study is superficial at best. The Commission will note that the said cost studies are a mere seven (7) pages, lack a narrative description of the methodology and conclusions, omit any identification of underlying assumptions, and provide almost no recitation of data inputs.<sup>73</sup> Further, the Companies admit that these studies “should be monitored and updated.”<sup>74</sup> In short, the Companies' Embedded and Marginal Cost Studies are barebones and represent a halfhearted effort at ascertaining the costs and benefits of rooftop solar. These skimpy studies, which lack any meaningful detail, cannot possibly be sufficient to support the sea change in NEM policy proposed by the Companies.

In addition to being short on detail and analysis, the Companies' Embedded and Marginal Cost Study focuses almost exclusively on **costs** to the exclusion of **benefits**. NC WARN served the following data request upon the Companies: “Provide any value-of-solar studies completed by the Companies in the last ten years for distributed (rooftop) solar.”<sup>75</sup> In response, the Companies stated: “The

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<sup>72</sup> The Companies' purported cost-benefit analysis is Exhibit B to the Companies' Reply Comments.

<sup>73</sup> The Companies' Reply Comments, at pp. 6-13, & Ex. B.

<sup>74</sup> The Companies' Reply Comments, at p. 8.

<sup>75</sup> NC WARN *et al.*'s Initial Comments, Att. O, the Companies' Response to NC WARN's Data Request No. 1-16.

Company has calculated the value of solar through both embedded and marginal lenses. These studies are provided through question 2 in the Public Staff's Data Request sent December 22, 2021."<sup>76</sup> The Companies' response to "question 2 in the Public Staff's Data Request" described these studies exclusively in terms of **costs**: "Attached, please see the final versions of the embedded and marginal **cost** studies and supporting modeling, which are updated and vary slightly from those **cost** studies shared previously in an informal data request."<sup>77, 78</sup> At no place within the Companies' response did they reference how these studies analyzed the **benefits** of NEM solar. The reason is simple: the Companies failed to meaningfully analyze the benefits of NEM solar.

Indeed, the Public Staff also served data requests in this docket which cast doubt upon the supposed notion that the Companies conducted a Value of Solar Study. For instance, the Public Staff asked the Companies to: "Please explain why the Companies declined to perform a Value of Solar Study to assist in developing the proposed Rider RSC."<sup>79</sup> In response, the Companies went into extensive detail about their examination of the **cost** of NEM solar. For instance, the Companies

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<sup>76</sup> *Id.*

<sup>77</sup> NC WARN *et al.*'s Initial Comments, Att. N, the Companies Response to the Public Staff's Data Request No. 1-2 (emphasis added).

<sup>78</sup> The studies produced by the Companies in response to the Public Staff's Data Request No. 1-2 (NC WARN *et al.*'s Initial Comments, Att. N) were produced as part of a Zip file which included multiple native Excel format spreadsheets. Due to the nature of these files, it was not possible to convert the same to Adobe PDF for filing purposes. Upon request, undersigned counsel will provide the native files to Commission staff and/or the parties.

<sup>79</sup> NC WARN *et al.*'s Initial Comments, Att. P, the Companies' Response to the Public Staff's Data Request No. 1-28.

explained that “Duke Energy provided embedded and marginal cost analyses.”<sup>80</sup> However, the Companies were able to offer only a single weak example of the evaluation of the value of NEM solar: “While the Companies did not retain a third party to perform a Value of Solar Study (VOSS), as part of the Comprehensive Rate Review stakeholder process, the Companies did perform a VOSS, which was shared with stakeholders.”<sup>81</sup> However, as explained above, the stakeholder process was entirely inadequate and the purported Value of Solar Study undocumented.

C. The Companies Failed to Analyze Several Material Benefits of Rooftop Solar and Otherwise Failed to Comply with the NSPM-DER.

The EWG’s subject-matter expert, Karl Rábago, stated that the “Companies’ proposals in this proceeding fail to align with the best practices guidance from the NSPM-DER in several important ways.”<sup>82</sup> Mr. Rábago’s list of the Companies’ deficiencies is too long to list here, but in broad strokes, he identified the following failures of the Companies’ purported cost-benefit analysis:

- 1) fails to treat customer-sited generation as a utility system resource;
- 2) fails to account for alignment of the proposal, which predates HB 951, to Carbon Plan emission reduction goals;
- 3) fails to ensure symmetry by prioritizing utility profits over a competitive market for DG;
- 4) fails to account for the full range of utility impacts from DG;
- 5) fails to align with the 25+ years of benefit that customer-sited generation can produce;
- 6) fails to prove that the proposal avoids double counting of impacts;
- 7) fails to ensure transparency; and
- 8) fails

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<sup>80</sup> *Id.*

<sup>81</sup> *Id.*

<sup>82</sup> The EWG’s Initial Comments, Att. A, Rábago’s Report, at p. 25.

to conduct the benefit cost analysis separately from rate impact analysis.<sup>83</sup>

The only intervenor to support the fulsomeness of the Companies' cost-benefit analysis was the Public Staff.<sup>84</sup> In its Initial Comments, the Public Staff stated: "the [Companies'] studies included with this filing and reviewed by the Public Staff capture the bulk of the known and verifiable benefits."<sup>85</sup> This about-face is curious, given that the Public Staff, during the discovery phase of this docket, served data requests upon the Companies which admitted that the value of solar was not adequately analyzed. For instance, the Public Staff propounded the following data request upon the Companies: "Please explain why the Companies declined to perform a Value of Solar Study to assist in developing the proposed Rider RSC."<sup>86</sup>

In any event, the Public Staff is incorrect that the Companies adequately analyzed the benefits of solar. In fact, as described below, the Companies have ignored many of the known and verifiable benefits of NEM, and the Companies under-value benefits that they did quantify.

Following his analysis, Mr. Powers prepared Table 2 appearing below, which summarizes the deficiencies with the Companies' purported cost-benefit analysis and the Public Staff's Initial Comments. According to Mr. Powers,

The following Table 2 compares (1) the scope of the elements in a VOSS as identified by the Public Staff

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<sup>83</sup> The EWG's Initial Comments, at pp 15-16; see *also* the EWG's Initial Comments, Att. A, Rábago's Report, at pp. 26-27.

<sup>84</sup> The Public Staff's Initial Comments, pp. 30-31.

<sup>85</sup> *Id.* at 31.

<sup>86</sup> NC WARN *et al.*'s Reply Comments, Att. D, the Companies' Response to the Public Staff's Data Request No. 1-28.

and the Public Staff's appraisal of Duke Energy's adherence to those elements, (2) NC WARN *et al.*'s assessment of the completeness and accuracy of Duke Energy's treatment of those VOSS line items, (3) the VOSS elements – and the magnitude of those elements – in the 2013 North Carolina NEM cost-benefit assessment conducted by NCSEA *et al.*'s expert, Tom Beach of Crossborder Energy, and (4) the VOSS elements included in the National Standard Practice Manual for cost-benefit analysis of NEM.<sup>87</sup>

Table 2 from Mr. Powers' Reply Report<sup>88</sup> appears on the following page. Mr. Powers' Reply Report should be referenced for supporting citations, as well as additional explanations for certain portions of Table 2:

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<sup>87</sup> NC WARN *et al.*'s Reply Comments, Att. A, Powers' Reply Report, p. 5.

<sup>88</sup> Table 2 appears on page 6 of Mr. Powers' Reply Report (NC WARN *et al.*'s Reply Comments, Att. A).

**Table 2. Universe of NEM Benefits and Those Included in Duke Energy’s NEM Cost-Shift Analysis**

<b>Universe of DER Benefits Listed in PS Initial Comments (citing to 2015 SC report)</b>	<b>PS Initial Comments on Whether DER Benefit Is Included in Duke’s NEM Cost-Shift Calculation</b>	<b>NC WARN Assessment Whether DER Benefit Included in Duke’s NEM Cost-Shift Calculation</b>	<b>DER Benefits Included in Crossborder Energy NC Study, 2013 (cited in 2015 SC report)</b>	<b>National Standard Practice Manual for Cost-Benefit Analysis of DERs, 2020 (Tables S3, S4, S5)</b>
Avoided Energy	Yes	Yes (fuel cost and O&M only)	Yes	Yes
Avoided Fuel Hedge	Yes – in avoided energy	No (NCSEA comments, Ex. A, p. 6)	Yes	Yes
Avoided Capacity	Yes – under proposed NEEC	Yes – but very low (one-tenth the value estimated by Crossborder in 2013, p. 3)	Yes	Yes
Avoided Losses	Yes – in avoided energy and capacity	Yes – but low (see Crossborder 2013, p. 5)	Yes	Yes
Avoided or Deferred T&D	Yes/No	Yes/No	Yes	Yes
Avoided Ancillary Services	No	No	Yes	Yes
Market Price Reduction	No	No	Yes	Yes
Avoided Renewables Procurement	No	No	Yes	Yes
Monetized Environmental	Yes – in avoided energy (NO <sub>x</sub> and SO <sub>2</sub> only)	Yes (see Crossborder 2013, p. 5)	Yes	Yes
Avoided CO <sub>2</sub> Emissions	No	No	Yes	Yes
Social Environmental	No	No	No	Yes
Security Enhance / Risk	No	No	Yes	Yes
Societal (economic/jobs)	No	No	Yes	Yes

Table 2 clearly demonstrates that there are numerous material omissions from the Companies' analysis of the benefits of solar. As stated by Mr. Powers, "Duke Energy failed to conduct the cost-benefit analysis required by the applicable standard of care. In particular, Duke Energy did not analyze the full *value* of solar."<sup>89</sup>

D. Had the Companies Properly Analyzed the Benefits of Solar, the Companies Would Have Concluded that NEM Solar Is a Net Benefit.

Numerous intervenors have identified omissions from the Companies' cost-shift analysis. In fact, NCSEA *et al.* correctly identified that "there are several benefits of distributed renewable generation that DEC and DEP have not quantified," including "avoided costs for carbon emissions and fuel hedging benefits, which combined could add approximately 4 to 5 cents per kWh to the benefits."<sup>90</sup>

In his Reply Report, Mr. Powers analyzed the effect of including this "4 to 5 cents per kWh" addition to the benefits of existing residential NEM.<sup>91</sup> According to Mr. Powers, "[a]ssuming for the sake of argument that Duke Energy accurately quantifies the limited number of NEM benefits it considers, existing NEM would become decisively cost beneficial to non-NEM residential customers in DEC territory when carbon reduction and fuel hedging benefits are included, and nearly

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<sup>89</sup> NC WARN *et al.*'s Reply Comments, Att. A, Powers' Reply Report, p. 5 (emphasis in original).

<sup>90</sup> NCSEA *et al.*'s Initial Comments, Exhibit A, p. 6, footnote 7.

<sup>91</sup> NC WARN *et al.*'s Reply Comments, Att. A, Powers' Reply Report, pp. 1-2.

cost neutral to non-NEM residential customers in DEP territory.”<sup>92</sup> Table 1 below, which is excerpted from Mr. Powers’ Reply Report,<sup>93</sup> summarizes this analysis:

**Table 1. Effect of Including the Carbon and Fuel Hedging Benefits of Existing NEM on the Cost-Shift Alleged by Duke Energy**

Element	DEC		DEP-RES
	RS (58% of residential)	RE (42% of residential)	
NEM solar production, kWh/month	886	1,072	971
Alleged cost-shift with existing NEM, \$/month	31	30	59
Value per month of \$0.04- 0.05/kWh NEM benefit	(35-44)	(43-54)	(39-49)
Net cost shift of existing NEM tariff with carbon and fuel hedging benefits of NEM included, \$/month	(4-13)	(13-24)	10-20

Note: values in parenthesis represent negative values.

Interestingly, NCSEA *et al.*’s citation supporting the “4 to 5 cents per kWh” omission is to the October 29, 2020 rebuttal testimony offered by Mr. Beach in a NEM docket which was previously pending before the PSCSC.<sup>94</sup> Mr. Beach concluded “in the DESC proceeding that the economic benefit of NEM solar is more than double the cost, \$0.32/kWh versus \$0.12/kWh, when societal benefits

<sup>92</sup> *Id.* at 1.

<sup>93</sup> Table 1 appears on page 2 of Mr. Powers’ Reply Report (NC WARN *et al.*’s Reply Comments, Att. A). Please consult page 2 of Mr. Powers’ Reply Report for citations supporting Table 1.

<sup>94</sup> *Rebuttal Testimony of R. Thomas Beach for the South Carolina Coastal Conservation League, Southern Alliance for Clean Energy, Upstate Forever, Vote Solar, the Solar Energy Industries Association, and the North Carolina Sustainable Energy Association*, PSCSC Docket No. 2019-182-E (October 29, 2020), pp. 13-16.



are included in the determination of the value of NEM solar.”<sup>95</sup> Similarly, Mr. Beach conducted an independent Value of Solar Study in North Carolina in 2013.<sup>96</sup> In that 2013 study, Mr. Beach concluded that “even when treating lost revenues as a cost of non-utility solar generation, and only evaluating fifteen years of system operation, the benefits of solar were greater than the costs.”<sup>97</sup> Notably, NCSEA *et al.* sponsored a report by Mr. Beach in the present NEM proceeding. To be clear, however, as Mr. Rábago notes in his report, “Lost revenues are not a cost. Cost shifts only occur if all the costs avoided by the reduced use are less than the reduced revenue.”<sup>98</sup>

**IV. The Companies’ Proposed NEM Tariffs Are Unjust, Unreasonable and Discriminatory, and Therefore, the Proposed Tariffs Violate Both PURPA and HB 589.**

In its Initial Comments, the “Public Staff recommend[ed] that the Commission find that NEM generation facilities . . . are considered Qualifying Facilities under PURPA for purposes of fuel cost recovery.”<sup>99, 100</sup> As an initial matter, it is unnecessary for the Commission to make this determination because

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<sup>95</sup> NC WARN *et al.*’s Reply Comments, Att. A, Powers’ Reply Report, p. 2; see also PSCSC, Docket No. 2019-182-E, *Rebuttal Testimony of R. Thomas Beach*, October 29, 2020, Table 11, p. 22.

<sup>96</sup> The EWG’s Initial Comments, pp. 10-11.

<sup>97</sup> *Id.* (citing R.T. Beach & P.G. McGuire, *The Benefits and Costs of Solar Generation for Electric Ratepayers in North Carolina*, Crossborder Energy (Oct. 18, 2013)).

<sup>98</sup> The EWG’s Initial Comments, Att. A, Rábago’s Report, at p. 17.

<sup>99</sup> The Public Staff’s Initial Comments, p. 39.

<sup>100</sup> The Public Staff seemingly makes this argument in support of its flawed recommendation that the Net Energy Export Credit be charged at avoided cost. As described in the EWG’s Initial Comments, pages 13-15, this argument should be rejected.

Qualifying Facility (“QF”) status automatically applies under the Public Utility Regulatory Policies Act (“PURPA”)<sup>101</sup> to any on-site solar generator up to 1 MW.<sup>102</sup>

That said, the Public Staff’s reference to PURPA raises important questions. In fact, the Companies’ proposed NEM tariffs would violate the requirements of PURPA that rates applicable to a QF be just, reasonable and non-discriminatory.

A. The Requirement of Just, Reasonable and Non-Discriminatory Rates.

House Bill 589 requires that “[t]he rates shall be **nondiscriminatory** and established only after an investigation of the costs and benefits of customer-sited generation.”<sup>103</sup>

Similarly, charges upon solar QFs violate PURPA if the charge is not “**just and reasonable and in the public interest**” and if the charge “**discriminate[s] against any qualifying facility** in comparison to the rates for sales to other customers served by the electric utility.”<sup>104</sup> The Federal Energy Regulatory Commission (“FERC”) has determined that a QF “should be charged at a rate applicable to a non-generating [customer of the same customer class] unless the electric utility shows that a different rate is justified on the basis of sufficient load or other cost-related data.”<sup>105</sup>

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<sup>101</sup> 16 U.S.C § 824a-3.

<sup>102</sup> 18 C.F.R. § 292.203(d).

<sup>103</sup> N.C. Gen. Stat. § 62-126.4(b) (emphasis added).

<sup>104</sup> 18 C.F.R. § 292.305(a)(1) (emphasis added); see also EWG’s Reply Comments, Att. A, Rábago’s Reply Report, at pp.18-20.

<sup>105</sup> Joint Explanatory of the Committee of the Conference, P.L. 78-617, reprinted in *FERC Statutes and Regulations* ¶ 5151, p. 5105-06; 45 Fed. Reg. 12,214, 12,228 (Feb. 25, 1980) (“FERC Order No. 69”).

Significantly, FERC has ruled that QFs are “likely to have the same characteristics as the load of other non-generating customers of the utility,” and therefore, “the appropriate rate for sales to such a facility is the rate that would be charged to a comparable customer.”<sup>106</sup> FERC has set the following criteria for this analysis: to charge a different rate to a QF, the rate must (a) be “based on accurate data,” (2) be established using “consistent system wide costing principles,” and (3) “apply to the utility’s other customers with similar load or other cost-related characteristics.”<sup>107</sup> The violation of “any single prong of these rules” would establish that proposed tariffs violated PURPA.<sup>108</sup>

If these rules are violated, PURPA allows interested persons to petition FERC and then the U.S. District Court for redress of NEM charges which violate PURPA.<sup>109</sup>

B. The Companies’ Proposed Tariffs Are Not “Based on Accurate Data” or “Consistent System Wide Costing Principles.”

The EWG’s subject-matter expert, Karl Rábago, issued two reports<sup>110</sup> addressing the failure of the Companies to base the proposed tariffs upon

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<sup>106</sup> FERC Order No. 69; see also FERC Docket No. EL21-64-000, Joint Concurrence of Chairman Glick and Commissioner Clements (June 2, 2021); the EWG’s Reply Comments, Att. A., Rábago’s Reply Report, at pp. 18-19.

<sup>107</sup> 18 C.F.R. § 292.305(a)(2); see also FERC Docket No. EL21-64-000, Joint Concurrence of Chairman Glick and Commissioner Clements (June 2, 2021); the EWG’s Reply Comments, Att. A., Rábago’s Reply Report, at pp. 18-19.

<sup>108</sup> FERC Docket No. EL21-64-000, Joint Concurrence of Chairman Glick and Commissioner Clements (June 2, 2021); the EWG’s Reply Comments, Att. A., Rábago’s Reply Report, at p. 19.

<sup>109</sup> 16 U.S.C. § 824a-3(h)(2)(B).

<sup>110</sup> The EWG’s Initial Comments, Att. A, Rábago’s Report; the EWG’s Reply Comments, Att. A, Rábago’s Reply Report.

“accurate data” and “consistent system wide costing principles,” as required by PURPA.

As explained by Mr. Rábago, the Companies have not provided evidence about the cost to serve customers with onsite generation because, among other reasons, the Companies failed to use data specific to NEM customers. Mr. Rábago stated:<sup>111</sup>

The Companies’ approach to the costs of net metered generation operators is not connected to any meaningful and reliable analysis of the specific costs to serve NEM customers; **instead, the Companies rely on averaged data from hundreds of diverse customer-generators.**

Mr. Rábago explained that, “[d]uring summer months especially, customer-generators typically have both lower on-peak energy requirements and lower on-peak demand.”<sup>112</sup> Unfortunately, however, the Companies’ analysis “does not account for the wide variation in usage and outflows except through gross averaging.”<sup>113</sup> It is of course correct that, all things being equal, NEM customers do not pay as much for their utility bill as they otherwise would pay without a net-metered system. However, the fact that NEM customers may pay less in utility bills does not establish that they are paying less than their full cost-of-service.

As described by Mr. Rábago, “The fundamental principle of cost-based rates is that customers who make greater use of the system pay for that greater use, and that customers who make less use of the system pay at an appropriately

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<sup>111</sup> The EWG’s Initial Comments, Att. A. Rábago’s Report, at p. 15 (emphasis added).

<sup>112</sup> *Id.* at 15-16.

<sup>113</sup> *Id.* at 16.

lower level.”<sup>114</sup> With its reliance upon gross averages, the Companies have failed to answer this fundamental question: What is the cost to serve NEM customers?

In Mr. Rábago’s initial report, he provided the following description of the Companies’ failure to provide accurate data in support of the proposed tariffs:<sup>115</sup>

What the Companies fail to provide are cost-of-service studies of NEM customers as evidence for how the cost to serve a net-metered customer changes as a result of generation operation, relying instead on broad assumptions based on system-wide averages. Customer generators seek to reduce use of utility energy services, but reduction in use does not and cannot create costs in a cost-of-service rate making regime. . . . The Companies failed to provide any evidence to support a just and reasonable quantification and treatment of any such cost shifts or to demonstrate in any meaningful way that the potential cost shifts are sufficiently significant to justify adjustment through the net metering tariff. Lost revenues are not a cost of service. If lost revenues were considered costs, then all customers would be required to pay the average bill for their respective class.

Therefore, the Companies, in violation of PURPA, have failed to base the proposed NEM tariffs upon “accurate data” and “consistent system wide costing principles.”

C. The Companies’ Proposed Tariffs Are Discriminatory.

In violation of PURPA, and House Bill 589, the Companies’ proposed tariffs are discriminatory against NEM customers.<sup>116</sup>

The Companies have proposed requiring NEM customers to take service exclusively under TOU rates, pay a minimum monthly bill (MMB) for service that

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<sup>114</sup> *Id.*

<sup>115</sup> The EWG’s Initial Comments, Att. A. Rábago’s Report, at p. 16.

<sup>116</sup> See, e.g., the EWG’s Reply Comments, Att. A, Rábago’s Reply Report, at pp. 20-22.

non-generators in the same class do not pay, pay a grid access fee (for larger NEM customers) that would impose charges even if the NEM facility did not operate, and pay non-bypassable charges on the utility bill even if offset by generation credits. According to Mr. Rábago, “there is no comparison of NEM and non-NEM customers that allows for assessment of whether” these unique charges forced upon NEM customers are justified by the unique characteristics of such customers.<sup>117</sup>

Despite the lack of evidentiary foundation, this disparate treatment is highly prejudicial to NEM customers. As described by Mr. Rábago, “The methods of charging are different for NEM and non-NEM customers under the proposed tariffs, resulting in a NEM customer paying more for electricity than a non-NEM customer who imports the same amount of grid-supplied electricity, even if they have similar load or other cost-related characteristics.<sup>118</sup> This is precisely the type of discrimination prohibited by House Bill 589 and PURPA.

D. The Companies’ Proposed Tariffs Will Reduce the Economic Value of Rooftop Solar Systems.

The Companies’ proposed NEM tariffs will drastically reduce the economic value of rooftop solar systems and are therefore unjust and unreasonable, especially given the requirement that the Companies reduce their carbon emissions under House Bill 951. According to Mr. Powers, the Companies’ own data shows:

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<sup>117</sup> *Id.* at 21.

<sup>118</sup> *Id.*

- **DEC's RS tariff:** "This reduction in savings amounts to twenty-nine percent (29%) for DEC NEM customers under the RS tariff";<sup>119</sup>
- **DEC's RE tariff:** There would be "a 31 percent decline in NEM savings for DEC's NEM customers under the RE tariff";<sup>120</sup> and
- **DEP:** "This reduction in savings amounts to thirty percent (30%) for DEP's NEM customers."<sup>121</sup>

Mr. Powers drew these conclusions directly from the Companies' own responses to data requests.<sup>122</sup>

In their initial comments, numerous other intervenors reached similar conclusions concerning the negative impact of the proposed NEM tariffs on the economic value of rooftop solar systems. For instance, the Public Staff concluded that the average monthly bill for NEM customers could increase by as much as 118.53%:

Based on the data provided by the Companies, the Public Staff analyzed the impacts of the proposed NEM Tariffs on quartiles of residential customers. The customer data was separated based on solar generation in kWh as a percent of load in kWh. The top quartile of customers on average generates 102.84% of their electricity needs, leading to a current average bill of \$26.38. **Under the proposal, their bill would on average increase to \$57.65.** On the other end of the spectrum, the bottom quartile of customers only generates 50.3% of their electricity needs, leading to an average monthly bill of \$100.77. **Under the proposal, their average bill would increase to \$117.49. The first quartile percent change in bill**

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<sup>119</sup> NC WARN *et al.*'s Initial Comments, p. 23.

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.* at 22-23; see also NC WARN *et al.*'s Initial Comments, Att. A, Powers' Report, pp.10-11.

**would be 118.53% while the last quartile would increase by 16.59%.**<sup>123</sup>

These value reductions identified by the Public Staff are extremely significant. For instance, the average monthly bill increase of 118.53% for the first quartile equates to an approximate fifty-eight percent (58%) reduction in value of the system. These findings by the Public Staff also establish that the proposed NEM rate structure is discriminatory based on the size of the system installed and amount of solar energy generated.

The Rooftop Solar Installers reached similar conclusions. In their Initial Comments, the Rooftop Solar Installers noted that they “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.”<sup>124</sup> Following an analysis of this data, the Rooftop Solar Installers “found a reduction in value to the customers of 20% - 35% over the life of the solar system.”<sup>125</sup>

Even NCSEA *et al.*’s Initial Comments admitted that the proposed NEM tariffs would reduce the economic value of rooftop solar systems. According to NCSEA *et al.* and its consultant, Mr. Beach, “without this [Smart Saver Solar] incentive, bill savings for a typical solar customer with an EV would drop by about 15% and would drop further for customers who do not adjust to the new TOU

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<sup>123</sup> The Public Staff’s Initial Comments, p. 31-32 (emphasis added).

<sup>124</sup> Rooftop Solar Installers’ Initial Comments, p. 3.

<sup>125</sup> *Id.*



periods.”<sup>126</sup> With neither the Smart Saver Solar incentive nor EV, NCSEA *et al.*'s analysis predicts a decline in NEM value of twenty-four percent (24%).<sup>127</sup>

E. The Companies' Proposed Tariffs Are Unreasonably Complex.

The Companies' proposed tariffs are also unjust and unreasonable because they are too vague and complex, which will make it impossible for customers to project their savings (if any) from rooftop solar. The complexities of the proposed NEM tariffs were convincingly summed up by NCSEA *et al.* as follows:

Most important, the package of NEM reforms is complex, requiring customers to understand a new, complicated TOU/ CPP rate design with a minimum bill and non-bypassable charges, and to participate in the Winter BYOT program. This structure is far more complex than traditional NEM, whose key strength always has been the mechanism's easy understandability for prospective solar customers – i.e. “running the meter backward.”<sup>128</sup>

The Rooftop Solar Installers' Initial Comments provided even more detail concerning the complexities of the proposed NEM tariffs: “Under the current net metering system, the NCRSI companies [*i.e.*, the Rooftop Solar Installers] need 24 energy data points to model solar effectively (12 months of energy usage data and 12 months of projected solar production).”<sup>129</sup> However, under the Companies' proposed NEM tariffs, “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).

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<sup>126</sup> NCSEA *et al.*'s Initial Comments, p. 9.

<sup>127</sup> NCSEA *et al.*'s Initial Comments, Attachment A, Table 2, p. 10; see also NC WARN *et al.*'s Reply Comments, Att. A, Powers' Reply Report, p. 3, footnote 17.

<sup>128</sup> NCSEA *et al.*'s Initial Comments, Exhibit A, pp. 6-7.

<sup>129</sup> Rooftop Solar Installers' Initial Comments, p. 5.

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.”<sup>130</sup> Accordingly, the Rooftop Solar Installers concluded 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” and “will result in an erosion of confidence in our industry and a loss of credibility.”<sup>131</sup>

F. The Proposed Tariffs Have an Unjust and Unreasonable Impact Upon Legacy Customers.

The Commission should seriously consider the arguments of intervenor Mr. Oulman concerning the unreasonable and unjust impact of the proposed NEM tariffs upon legacy customers. Under the Joint Application, at least some elements of the proposed NEM tariffs would apply to legacy customers such as Mr. Oulman as of January 1, 2027. Mr. Oulman determined that the proposed NEM tariff as compared to his current flat-rate tariff “would result in a 100% increase in my cost of electricity for the one-year period” that he evaluated and would jump from \$177.36 to \$355.62 annually,<sup>132</sup> and concluded that the proposed NEM tariff would retroactively create a significant change in the economics of our decision to install

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<sup>130</sup> *Id.* at 5-6.

<sup>131</sup> *Id.* at 7.

<sup>132</sup> Initial Comments of Donald Oulman, p. 2, and Exhibit 1 (p. 8).

a PV solar system”<sup>133</sup> and would similarly impact other home owners who want to help reduce dependence on fossil fuels.<sup>134</sup>

The drastic changes to the current NEM tariffs proposed by the Companies will significantly impair the value proposition under which these legacy customers made the decision to invest in rooftop solar. For instance, a customer who installs rooftop solar in December 2022 will have that value proposition changed just 5 years into the 25+-year life of the investment.<sup>135</sup> This unfair treatment of legacy customers justifies rejecting the proposed NEM tariffs.

**V. Non-Unanimous Settlements Should Be Given No Weight by the Commission.**

As the Commission is aware, the Companies’ proposed tariffs are based upon a MOU among certain parties to the above-captioned docket. Subsequently, the Companies executed a non-binding Stipulation with the Rooftop Installers. Neither of these agreements are unanimous—*i.e.*, numerous prominent parties to the present docket would not agree to the MOU.

In *State ex rel. Utilities Comm’n v. Carolina Util. Customers Ass’n*,<sup>136</sup> the North Carolina Supreme Court, in the context of a general rate case, emphasized the skepticism which the Commission must exercise when considering a nonunanimous settlement agreement. The Supreme Court stated that “Chapter 62 contemplates a full and fair examination of evidence put forth by *all* of the parties,”

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<sup>133</sup> *Id.* at 5.

<sup>134</sup> Oulman’s conclusions mirror those filed by other roof-top solar owners filed as part of the more than 400 consumer statements of position filed in Docket E-100 Sub 180CS.

<sup>135</sup> Oulman’s Initial Comments, p. 5.

<sup>136</sup> 348 N.C. 452, 462-67, 500 S.E.2d 693, 701-03 (1998).

and “[t]o allow the Commission to dispose of a contested rate case by stipulation of less than all certified parties would effectively absolve the Commission of its statutory and due process obligations to afford all parties a fair hearing.”<sup>137</sup> The Supreme Court proceeded to describe several problems with nonunanimous settlement agreements:

The adoption of a non-unanimous stipulation raises several due-process concerns. The most obvious is the possibility that opposing parties may be denied an opportunity to present evidence against acceptance of the stipulation. **A more subtle problem is the possibility of an unintentional shift of the burden of proof from the utility to the opponents of the stipulation. There is a danger that when presented with a ready-made solution, the Commission might unconsciously require that the opponents refute the agreement,** rather than require the utility to prove affirmatively that the proposed rates are just and reasonable.<sup>138</sup>

Therefore, the Supreme Court held that, notwithstanding the presence of a nonunanimous settlement agreement, the Commission nonetheless must “set[] forth its reasoning and make[] ‘its own independent conclusion’ supported by substantial evidence on the record that the proposal is just and reasonable to all parties in light of all the evidence presented.”<sup>139</sup>

### **CONCLUSION**

As set forth in this Joint Brief, the Companies cannot meet their evidentiary burden, and the Commission cannot, without further investigation of the costs and benefits of customer-sited generation as required by statute, revise the current

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<sup>137</sup> *Id.* at 464, 500 S.E.2d at 702.

<sup>138</sup> *Id.* (emphasis added).

<sup>139</sup> *Id.* at 466, 500 S.E.2d at 703.

NEM tariffs. The Commission should enter the proposed Order filed contemporaneously herewith. The said proposed Order would reject the Companies' proposed NEM tariffs and initiate a Commission-led cost-benefit analysis, including a Value of Solar Study.

*[Signatures Follow on Next Page]*

This the 16th day of December, 2022.

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**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of the foregoing document upon all counsel of record by email transmission.

This the 16th day of December, 2022.

/s/ Andrea C. Bonvecchio  
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