

## BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

DOCKET NO. E-2, SUB 1169

DOCKET NO. E-7, SUB 1168

In the Matter of:

Petition of Duke Energy Progress,  
 LLC, and Duke Energy Carolinas, LLC  
 Requesting Approval of Community  
 Solar Program Plan Pursuant to G.S.  
 62-126.8

)  
 )  
 )  
 )  
 )  
 )  
 )

**SIERRA CLUB'S  
 INITIAL COMMENTS**

PURSUANT TO NCUC Rule R1-19 and the *Order Establishing Proceeding to Review Proposed Community Solar Program Plan* in the above-captioned docket, the Sierra Club respectfully submits the following initial comments regarding the Community Solar Program Plan (“Community Solar Proposal” or “Proposal”) filed by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively, “the Companies” or “Duke”) pursuant to House Bill 589, Session Law 2017-192 (“H.B. 589”).

**INTRODUCTION**

On July 27, 2017, Governor Cooper signed H.B. 589 into law. Included within H.B. 589 is the Distributed Resources Access Act for which the General Assembly expressed its goal to “encourage the leasing of solar energy facilities for retail customers and subscription to shared community solar energy facilities.” N.C. Gen. Stat. (“G.S.”) § 62-126.2. The Distributed Resources Access Act mandates that “[e]ach offering utility shall file a program with the Commission to offer a community solar energy facility program for participation in by its retail customers.” G.S. § 62-126.8(a).

On August 30, 2017, the Commission initiated a rulemaking proceeding to adopt and modify the Commission's rules, as necessary, to implement the Distributed Resources Access Act. Sierra Club submitted initial comments and reply comments in this proceeding. On December 19, 2017, the Commission issued an order promulgating final Commission Rule R8-72.

On January 23, 2018, in accordance with H.B. 589, Duke filed its Community Solar Proposal. On January 26, 2018, the Commission issued an *Order Establishing Proceeding to Review Proposed Community Solar Program Plan*.

Duke's Community Solar Proposal includes what Duke refers to as "Tranche 1," approximately 1 megawatt ("MW") of community solar capacity each for Duke Energy Progress, LLC ("DEP") and Duke Energy Carolinas, LLC ("DEC") out of the total 40 MW required by G.S. § 62-126.8. Duke plans to purchase the solar energy for Tranche 1 from a third-party solar provider through a forthcoming procurement effort. Customers subscribing to Tranche 1 subscriptions – or "blocks" – will be required to pay two upfront fees, totaling an estimated \$500. Subscribers will first pay \$200 to reserve their place in the community solar program, and will then pay the remaining estimated \$300 after Duke has entered into the respective power purchase agreement with the third-party solar provider. Duke estimates that each 1 MW project will have approximately 4,300 blocks.

Each subscription fee will include the costs of the power purchase agreement and the program's administrative costs. The Proposal does not include an option for customers to participate without paying the entire program cost upfront. Each community solar block will represent 220 watts and will generate an estimated 35 kilowatt-hours

(“kWh”) a month. Duke will credit customers annually based on the total output of a subscriber’s block(s) multiplied by the applicable avoided cost rate. Duke estimates that the Tranche 1 facilities could achieve commercial operation by 2020-2021, but Duke has not included an implementation schedule in its Proposal beyond Tranche 1.

Sierra Club is concerned that the proposed Community Solar Program does not comply with G.S. § 62-126.8 and Commission Rule R8-72 and will not establish a successful community solar program. First and foremost, Sierra Club is concerned that Duke’s estimated price for each 220 watt community solar block, \$500, is significantly inflated and will have a chilling effect on program subscription. As proposed, the community solar program will provide no economic benefit to subscribing customers over a 20-year period and will require subscribers to pay a large upfront fee, which will limit access for many potential subscribers.

Sierra Club believes that Duke has the ability to substantially reduce both the PPA price and proposed marketing and administrative costs. The difference between \$500 per block and \$400 per block, for example, would turn the Tranche 1 community solar offering from a premium product into one that provides an economic benefit over the life of the subscription.<sup>1</sup> A lower-cost community solar program that minimizes costs and maximizes benefits would provide a net benefit to subscribers, increase access for Duke’s customers, and would be easier to market.

Sierra Club is also concerned that Duke has not provided an adequate implementation schedule; that Duke’s annual customer crediting plan is problematic; and

---

<sup>1</sup> Duke Energy Carolinas, LLC and Duke Energy Progress, LLC’s Joint Petition for Approval of Community Solar Program Plan in Docket Nos. E-2, Sub 1169 and E-7, Sub 1168, at p. 10 (Jan. 23, 2018)(hereinafter “Community Solar Proposal”) (“At current avoided cost estimates, the subscriber’s credit would be \$420 over the 20-year term.”).

that Duke has failed to adequately evaluate opportunities for low-to-moderate income customer participation. For these reasons, Sierra Club believes that the Community Solar Proposal is not in the public interest and does not comply with G.S. § 62-156.8 and Commission Rule R8-72.

Sierra Club respectfully requests that the Commission require Duke to revise its Community Solar Proposal, with stakeholder input, to develop a community solar program that will provide meaningful access to North Carolinians and comply with applicable state law. Sierra Club is committed to the development of a community solar program in North Carolina and would welcome the opportunity to work with the Companies and other stakeholders to develop such a program.

#### **Sierra Club's Comments on Duke's Community Solar Proposal**

##### **a. Duke's Community Solar PPA Price**

Duke proposes to purchase output from a third-party owned solar energy facility under a power purchase agreement ("PPA") to use for its community solar program.<sup>2</sup> This PPA price will be the primary component of community solar subscription costs and will largely determine whether or not the program provides subscribers an opportunity to receive any economic benefit. For this reason, Sierra Club requests that Duke be required to demonstrate that it has diligently sought out the lowest feasible PPA price for its community solar projects.

Duke estimates the community solar PPA price could be \$65/MWh but acknowledges that the Companies will not know the actual PPA price until it chooses a site and negotiates a PPA with a solar facility. Sierra Club notes that Duke's \$65/MWh

---

<sup>2</sup> Community Solar Proposal, at p. 7. G.S. § 62-126.8(e)(1) indicates that Duke may elect to procure energy for its community solar program through a power purchase agreement.



estimate appears to be based on Duke's South Carolina community solar request for proposals ("RFP") from 2015.<sup>3</sup> Because solar prices have decreased substantially since 2015, Sierra Club expects that PPAs in 2018 may be significantly lower than \$65/MWh.<sup>4</sup>

Duke estimates that each 220 watt Shared Solar block will cost \$500.<sup>5</sup> Of this \$500, the estimated \$65/MWh PPA price represents \$284. If the PPA price is lowered, then the program will be more affordable for potential participants. As discussed below, Duke acknowledges that a lower PPA price—resulting in a better deal for subscribers—will also decrease required marketing costs, further improving program economics for customers.<sup>6</sup>

Duke proposes to competitively procure solar energy from two solar facilities with nameplate capacities of approximately 1 MW each for Tranche 1 of the program.<sup>7</sup> Duke asserts that 1 MW projects in Tranche 1 are appropriate "to test how to attract and retain subscribers to the Program."<sup>8</sup> However, projects of this size are less likely to capture economies of scale than larger projects and, therefore, often yield more expensive PPAs.<sup>9</sup> Sierra Club requests that Duke be required to demonstrate to the Commission that its PPA procurement plan will minimize costs and maximize benefits for community

---

<sup>3</sup> Community Solar Proposal, at pp. 9-10.

<sup>4</sup> The prices of installed commercial and utility-scale solar are reported to have declined between 18-43% between 2015 and 2017. *See* National Renewable Energy Laboratory, NREL Report Shows Utility-Scale Solar PV System Cost Fell Nearly 30% Last Year (Sept. 12, 2017), <https://www.nrel.gov/news/press/2017/nrel-report-utility-scale-solar-pv-system-cost-fell-last-year.html>. Recent solar RFPs have also attracted record low solar prices. *See, e.g.* Greentech Media, Xcel Attracts 'Unprecedented' Low Prices for Solar and Wind Paired With Storage (Jan. 8, 2018), <https://www.greentechmedia.com/articles/read/record-low-solar-plus-storage-price-in-xcel-solicitation#gs.IoNjMHU>.

<sup>5</sup> Community Solar Proposal, at p. 10.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.* at p. 9.

<sup>8</sup> *Id.* at p. 5.

<sup>9</sup> *See, e.g.* In the Matter of Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities – 2016, Docket No. E-100, Sub 148, at p. 36 (Oct. 1, 2017)(hereinafter "2016 Avoided Cost Order").

solar subscribers, and receive Commission approval, before signing its Tranche 1 PPAs, consistent with Commission Rule R8-72(c)(1)(xii).

For example, in order to improve economies of scale, Duke could increase the size of its initial Tranche to a single 5 MW project, or it could purchase energy for its Tranche 1 community solar program as a carve-out of a larger 5 MW project, the maximum permissible capacity for community solar facilities under G.S. § 62-126.8. If Duke used a carve-out from a 5 MW project but only intended to offer a 1 MW Tranche 1 program, it could allocate 20% of the project's output for the program.

In order to expedite program implementation, Duke should also thoroughly evaluate opportunities to contract with a solar energy facility that is already in the interconnection queue and that will achieve commercial operation earlier than Duke's estimated date of 2020 or 2021 included in its Proposal.<sup>10</sup> Many of the solar qualifying facilities ("QFs") that have secured legally enforceable obligations under Duke's standard offer contracts are less than or equal to 5 MW and would be eligible to serve as a community solar energy facility.<sup>11</sup>

Duke has indicated that it reviewed the interconnection queue for projects that could be used for Tranche 1 and contacted developers with projects under 2 MW in and adjacent to Wake County.<sup>12</sup> Duke also indicated, however, that it did not approach developers in Mecklenburg and Durham Counties with projects under 5 MW currently in

---

<sup>10</sup> Community Solar Proposal, at p. 6.

<sup>11</sup> See, e.g. 2016 Avoided Cost Order, at p. 11 (Duke witness Snider testified that approximately 1,100 MW of solar QFs under 5 MW have established legally enforceable obligations in North Carolina).

<sup>12</sup> Duke Response to Public Staff Data Request 1-11. Attached hereto as Attachment 1.

the interconnection queue.<sup>13</sup> Duke should contact the developers in these additional counties as well to inquire about community solar project eligibility and availability.

Sierra Club recognizes that QFs that have secured avoided cost PPA rates greater than the rate necessary to create an attractive community solar program may be unwilling to renegotiate at a lower price for the community solar program. However, it is possible that a solar developer with many projects in the queue may be willing to accept a reduced PPA rate in exchange for recognition – and the marketing opportunity – as a Community Solar Provider.<sup>14</sup> Duke should demonstrate that it has thoroughly evaluated existing projects in the interconnection queue that could be used for Tranche 1.

Duke indicates that it plans to encourage community solar energy facility developers to partner with entities that may donate brownfields or other land for the facilities to improve the affordability of the program.<sup>15</sup> However, because the PPA price will be of critical importance in establishing a community solar program that will provide economic benefit over the life of the program – and be fully subscribed – Sierra Club requests that Duke be required to obtain Commission approval for its community solar PPA before entering into the contract. Sierra Club recognizes that this may slightly delay the Tranche 1 program schedule, but respectfully requests an expedited review of the

---

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

<sup>14</sup> Sierra Club notes that G.S. § 62-126.8 and Commission Rule R8-72 contemplate the development of new solar capacity to serve the community solar program. For this reason, if the Commission determines it is appropriate for Duke to use a small power production facility already in the interconnection queue for Tranche 1 in order to expedite the community solar program's implementation, this capacity should be considered part of the Companies' 40 MW community solar obligation, and it should not be considered part of the aggregate capacity referenced in G.S. § 62-110.8(b)(1). This will avoid any such capacity being double counted as both community solar capacity and as capacity towards the 3,500 MW referenced in G.S. § 62-110.8(b)(1).

<sup>15</sup> Community Solar Proposal, at p. 9. *E.g.*, Duke hosted a webinar in March to discuss the community solar program with solar developers in North Carolina.

PPA that will serve Tranche 1 to ensure that Duke has diligently evaluated opportunities to minimize PPA costs and maximize benefits to subscribers.

b. Duke's Proposed Avoided Cost Credit

G.S. § 62-126.8(d) requires Duke to credit community solar subscribers for energy generated from the community solar facility at “the avoided cost rate.”

Commission Rule R8-72(c)(1)(v) requires Duke's Community Solar Proposal to include the methodology for determining the avoided cost rate at which subscribers will receive bill credits. Duke has proposed to credit community solar subscribers using a fixed 20-year avoided cost rate established under the avoided cost methodology approved by the Commission at the time the Companies open the community solar program for subscriptions.<sup>16</sup> Applying this methodology, Duke estimates the current avoided cost credit to be \$50/MWh.<sup>17</sup>

For the purposes of Duke's Tranche 1 community solar offering, Sierra Club does not object to Duke's proposed avoided cost methodology.<sup>18</sup> Sierra Club may re-evaluate Duke's avoided cost methodology in subsequent program amendments—for which Duke must receive Commission approval pursuant to Commission Rule R8-72(c)(4) and (e)(1)—based upon the outcome of Tranche 1 implementation, the Commission's then-approved avoided cost methodology, or other circumstances that may warrant reconsideration of the avoided cost methodology.

c. Duke's Proposed Marketing and Administrative Costs

---

<sup>16</sup> Community Solar Proposal, at p. 14, Rider SSR at p. 1 (“Application Process” para. 2).

<sup>17</sup> Duke Response to Public Staff Data Request 1-3. Attached hereto as Attachment 2.

<sup>18</sup> Sierra Club does not concede that an avoided cost rate is the appropriate subscriber credit rate for a well-designed community solar program. However, because G.S. § 62-126.8(d) limits the community solar credit to avoided cost, Sierra Club will evaluate Duke's current Community Solar Proposal within the statutory limitations of H.B. 589.

Duke's proposed marketing and administrative costs are too high. As proposed, the marketing and administrative costs will significantly inflate customer subscription costs and will disincentivize community solar customer participation. Duke has failed to provide reasonable evidence supporting these excessive proposed costs, which are dramatically higher than marketing costs for other community solar programs.

The community solar program must provide the Companies a mechanism to recover "reasonable... administrative costs...associated with each community solar energy facility...." G.S. § 62-126.8(e)(1)(emphasis added). Duke must also provide a description and analysis of how the community solar program design will minimize costs and maximize benefits for each subscriber. Rule R8-72(c)(1)(xii). Duke plans to recover all administrative costs from subscribers through the subscription fee.<sup>19</sup> The administrative costs Duke has proposed are not reasonable, and the program has not been designed to minimize program costs.

In its Community Solar Proposal, Duke estimates that it will spend approximately \$860,000 on "Marketing and Customer Engagement" in Tranche 1, alone, or \$430,000 each for DEC and DEP.<sup>20</sup> This includes, among other items, \$400,000 on direct mail, \$100,000 on promotional events, \$100,000 on National Public Radio advertisements, and \$50,000 on Facebook advertisements.<sup>21</sup> Duke estimates that these marketing and customer engagement costs will represent \$131 of the projected \$500 price for each subscription block, more than 26% of the total subscription cost.<sup>22</sup>

---

<sup>19</sup> Community Solar Proposal, at p. 7.

<sup>20</sup> *Id.* at p. 15.

<sup>21</sup> Duke Response to Sierra Club Data Request 1-11. Attached hereto as Attachment 3.

<sup>22</sup> Community Solar Proposal, at p. 10. Sierra Club notes a potential discrepancy between the marketing costs listed at Proposal p. 10, \$131/block, and the marketing cost allocation that Duke represented in a response to a Sierra Club data request. Duke indicates in its data request response that the \$430,000 per

In addition to its marketing costs, Duke estimates additional administrative costs of \$37 for enrollment/billing/crediting; \$9 for a call center; and \$39 for program management, totaling \$85, or 17% of the \$500 subscription block price.<sup>23</sup> Total administrative costs—marketing plus additional administrative costs—account for over 43% of the total subscription cost.

Duke’s proposed marketing and administrative costs are significantly higher than marketing and administrative costs for other community solar programs. A forthcoming 2018 report by the Smart Energy Power Alliance (“SEPA”)—produced by Duke in response to a Sierra Club data request<sup>24</sup>—surveyed existing community solar programs and found that the median administrative costs for community solar programs smaller than 1 MW were \$0.12/W (\$0.10/W for marketing; \$0.02/W for customer billing and crediting), and the costs for programs 1 MW and larger were \$0.09/W (\$0.05/W for marketing; \$0.04/W for customer billing and crediting).<sup>25</sup>

Duke’s estimated marketing costs for each utility’s planned 1 MW project equal \$0.43/W,<sup>26</sup> and Duke’s customer billing and crediting costs equal nearly \$0.16/W,<sup>27</sup> totaling approximately \$0.59/W. These costs, not including Duke’s proposed Call Center

---

utility marketing cost was based on an estimate of \$100 per customer (\$100 multiplied by 4,300 blocks). However, the Proposal states that marketing costs are estimated at \$131 rather than \$100.

<sup>23</sup> *Id.*

<sup>24</sup> Duke produced a draft of this report in response to Sierra Club Data Request 1-3 that Duke reviewed while developing its Community Solar Proposal. Duke’s Response to Sierra Club Data Request 1-3 and the cover pages and relevant page addressing administrative costs are attached hereto as Attachment 4.

<sup>25</sup> *Id.*

<sup>26</sup> 1 MW = 1,000,000 W; \$430,000/1,000,000 = \$0.43.

<sup>27</sup> \$37 per block for enrollment/billing/crediting, multiplied by 4,300 blocks = \$159,100. \$159,100 per MW = \$0.159/W.

and Program Management costs, are approximately 490% to 650% of the median marketing costs for similarly-sized community solar projects across the country.<sup>28</sup>

Duke states that its proposed high marketing costs are based on the assumption that the community solar offering will be a “premium program that does not deliver an economic benefit to participating customers.”<sup>29</sup> The reasoning appears to be that because a premium product would be less attractive to potential subscribers, Duke will need to spend more to market the program. This reasoning is circular, however, because the high marketing and administrative costs themselves are one of the primary reasons that the community solar program does not deliver an economic benefit to customers.

Duke’s marketing cost analysis also fails to account for customers who may subscribe to multiple community solar blocks, thereby decreasing the customer acquisition cost per block, and it does not consider the present value of marketing efforts that may reach customers who subscribe to the community solar program in future Tranches. Tranche 1 customers—especially customers purchasing only a single block—may therefore subsidize future community solar subscribers whose subscriptions costs are lower due to decreased marketing needs.

If Duke’s marketing and administrative costs were more consistent with those of other community solar programs across the country, Duke’s subscription price per block would decrease significantly, dramatically improving the economics of the program.

Additionally, if the solar PPA price is lower than Duke estimates—as discussed above—

---

<sup>28</sup> To be consistent with the SEPA statistics, which considered (1) marketing and (2) billing/crediting costs, these percentages only include Duke’s (1) marketing costs (\$430,000/MW or \$0.43/W) and (2) enrollment/billing/crediting costs (\$37 multiplied by 4,300 blocks = \$159,100/MW or \$0.159/W). Duke’s Call Center (\$0.038/W) and Program Management (\$0.167/W) would put total administrative costs at approximately \$0.79/W.

<sup>29</sup> Duke Response to Sierra Club Data Request 1-11. Attached hereto as Attachment 3.

the subscription price would be even lower. The difference between \$500 per block and \$400 per block, for example, would turn the Tranche 1 community solar offering from a premium product into one that provides an economic benefit over the life of the subscription.<sup>30</sup> A lower-cost community solar program that minimized costs and maximized benefits would provide a net benefit to subscribers, would be more attractive to customers, and would be easier to market.<sup>31</sup>

This is particularly important because Duke expressly states in its Proposal that “if subscriptions are insufficient to cover the costs of the Program in either or both service territories, DEC and/or DEP may petition the Commission to discontinue the Program.”<sup>32</sup> As proposed, Duke has laid the groundwork for a community solar program that, due to excessive marketing and administrative costs, provides no economic benefit to customers. This, in turn, may prevent full program subscription, which may lead Duke to discontinue the program. This would frustrate the General Assembly’s intent in enacting G.S. § 62-126.8. As the Commission has stated, “the Community Solar Program is not a permissive pilot program suggested by the General Assembly; rather, it is a statutory mandate.”<sup>33</sup>

Sierra Club recommends that, pursuant to G.S. § 62-126.8(e)(1), the Commission only permit Duke to recover reasonable administrative charges through customer subscription fees. The costs Duke has proposed are not reasonable and have not been

---

<sup>30</sup> Community Solar Proposal, at p. 10 (“At current avoided cost estimates, the subscriber’s credit would be \$420 over the 20-year term.”).

<sup>31</sup> SEPA, What the Community Solar Customer Wants, at p. 19 (2015), available at [http://solarmarketpathways.org/wp-content/uploads/2017/07/SEPA\\_Community-Solar-Customer-Wants\\_.pdf](http://solarmarketpathways.org/wp-content/uploads/2017/07/SEPA_Community-Solar-Customer-Wants_.pdf). The found a “dramatic” drop in customer interest between \$395 to \$495 per subscription. Duke produced a copy of this report in response to Sierra Club Data Request 1-3.

<sup>32</sup> Community Solar Proposal, at p. 12.

<sup>33</sup> *In the Matter of: Rulemaking Proceeding to Implement G.S. 62-126.8*, Docket No. E-100, Sub 155, Order Adopting Rule R8-72, at p. 14 (Dec. 19, 2017).



sufficiently justified. Duke should be required to establish a marketing plan that will minimize costs and that will more closely align with community solar marketing costs of other community solar offerings.

Sierra Club's interest in community solar is to increase solar access for all North Carolinians. Sierra Club would consider assisting Duke in the promotion of the community solar program in hopes of decreasing program costs for subscribers. For example, Sierra Club has over 19,000 members in North Carolina, many of whom may be ideal candidates for a community solar program and with whom Sierra Club regularly communicates. Sierra Club's members could contribute to building interest in and demand for community solar programs in their locale. However, in order for Sierra Club to assist in community solar marketing efforts, the program offering must be one that Sierra Club can support.

d. Duke's Proposed Subscription Cost Structure

Under Duke's Proposal, community solar subscribers will be required to pay an initial \$200 fee to reserve their place in the program and will then pay the balance of the subscription cost after the program has been fully subscribed and the Companies have executed the PPA, currently estimated at \$300.<sup>34</sup> Minimizing the upfront cost of participation will likely increase customer participation and accessibility. G.S. § 62-126.8 does not mandate that community solar programs must include an upfront subscription fee. To the contrary, Commission Rule R8-72 clearly contemplates the availability of "payment plans or financing options."<sup>35</sup>

---

<sup>34</sup> Community Solar Proposal, at p. 10.

<sup>35</sup> Commission Rule R8-72(c)(1)(iii).

Many community solar programs do not require an upfront fee and, instead, allow customers to pay a monthly fee. In North Carolina, three electric cooperatives with community solar programs – Blue Ridge Energy, Piedmont EMC, and Randolph EMC – allow customers to pay monthly fees rather than upfront subscriptions.<sup>36</sup> Utilities in Tennessee, Florida, and Utah, among others, also provide customers community solar programs with no upfront subscription fee.<sup>37</sup>

Duke could design a community solar program at little or no upfront cost without requiring cross-subsidization by non-participating customers over the life of the program. While G.S. § 62-126.8(e)(7) states that the community solar program must “hold harmless [Duke customers] who do not subscribe to a community solar energy facility”, it does not prohibit a program that would allow Duke to recoup its full program costs solely from subscribing customers over the duration of the program.

If the Commission determines that Tranche 1 *should* require an upfront subscription fee to provide initial revenue to cover program costs, Sierra Club recommends that this fee only include reasonable overhead costs and not the PPA component. The PPA component of the subscription cost, which Duke will pay monthly to the third-party solar developer rather than in a lump sum upfront, could also be allocated to customers monthly rather than included in the upfront subscription cost. Including only the overhead administrative costs in the upfront fee would significantly

---

<sup>36</sup> See, e.g. <http://go.blueridgeenergy.com/community-solar>; <http://pemc.coop/wp-content/uploads/2016/02/Community-Solar-Brochure-2016.pdf>; <https://www.randolphemc.com/content/sunpath-community-solar>.

<sup>37</sup> See, e.g. Chattanooga EPB Solar Share, <https://epb.com/home-store/power/efficiency/residential-solar-share>; Orlando Utilities Commission, <http://www.ouc.com/environment-community/solar/community-solar>; Rocky Mountain Power Subscriber Solar Program, <https://www.rockymountainpower.net/env/bssssp/ussfaq.html>.

decrease the initial financial burden on participating customers and would likely make the program more appealing to eligible customers.

Finally, if the Commission determines that Tranche 1 should require an upfront subscription fee that includes all program costs, Sierra Club recommends that Duke reduce the initial \$200 fee to \$50 to reduce the initial cost to subscribers. Because Duke indicates that subscribers may have to wait 2-3 years between paying the upfront cost and when the community solar project reaches commercial operation, the initial payment should be as small as possible.

e. Duke's Community Solar Implementation Schedule

G.S. § 126.8(e)(4) requires Duke to include a program implementation schedule in its community solar program application, and Rule R8-72(c)(1)(xiv) requires Duke's initial proposed community solar plan to include an "implementation schedule for installing 20 MW of solar energy, including a cost estimate and justification for the proposed schedule." The Community Solar Proposal states that Tranche 1 "could achieve commercial operations" in 2020-2021.<sup>38</sup> However, Duke acknowledges in its Proposal that it has not yet developed an implementation schedule and cost estimates for installing the remainder of the 20 MW of solar energy for each service territory.<sup>39</sup> Duke's Proposal fails to provide an adequate implementation schedule as required by H.B. 589 and Commission Rule R8-72.

Sierra Club is concerned that the absence of an implementation timeline will result in undue delay of H.B. 589's community solar mandate, contrary to the policy goals of the statute and to the public interest. Sierra Club's concern regarding Duke's

---

<sup>38</sup> Community Solar Proposal, at p. 6.

<sup>39</sup> *Id.* at p. 17.

potential delay of the community solar program is amplified by the delay Sierra Club observed in South Carolina, where Duke has delayed multiple times a community solar program established through state legislation.<sup>40</sup>

Duke should be required to provide a program implementation schedule as required by statute and Commission rule. More comprehensive program planning may also increase overall program efficiencies and decrease costs. A proper implementation schedule will help ensure that H.B. 589's community solar mandate is on a schedule for which Duke will be accountable.

f. Duke's Proposed Annual Community Solar Credit

The Community Solar Proposal states that Duke will pay subscribers an annual credit based on the applicable avoided cost rate and the kilowatt-hours of energy produced by the community solar block.<sup>41</sup> This annual payment will not appear on customer bills but will be sent directly to customers. Sierra Club is concerned that Duke's proposed crediting plan may (1) inadvertently trigger federal or state securities laws and/or (2) create taxable income for participants. More generally, Sierra Club is also concerned that an annual payment will be less attractive to potential subscribers than monthly credits. Sierra Club recommends allocating benefits through a monetary bill credit on a participant's monthly bill. On-bill crediting, a common and widely accepted community solar crediting mechanism, would help avoid these issues.<sup>42</sup>

---

<sup>40</sup> See, e.g. South Carolina Public Service Commission, Docket No. 2017-1-E, *In re: Annual Review of Base Rates for Fuel Costs of Duke Energy Progress, LLC*, Comments of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy, at p. 6 (May 18, 2017).

<sup>41</sup> Community Solar Proposal, at p. 7.

<sup>42</sup> Interstate Renewable Energy Council, Model Rules for Shared Renewable Energy Programs, at p. 8 (2013), available at <http://www.irecusa.org/wp-content/uploads/2013/06/IREC-Model-Rules-for-Shared-Renewable-Energy-Programs-2013.pdf>.

Annual payments sent directly to customers could potentially be characterized as security under federal or state law, potentially subjecting Duke and/or customers to federal or state securities law regulation.<sup>43</sup> To minimize this potential issue, well-designed community solar programs credit participating customers directly on their bills, as either a monetary credit or a reduction in purchased kilowatt-hours.<sup>44</sup>

Duke's plan to send subscribers an annual check for their community solar credits may also create taxable income for participants, which may further disincentivize customer participation. Duke apparently anticipates this outcome, indicated in a response to a data request that part of its estimated costs for customer billing will be the cost of sending out 1099 forms.<sup>45</sup> Allowing for on-bill credits will help avoid the creation of taxable income as well.

Duke states that "[m]anaging credits and charges outside of the billing system supports quicker implementation of the Program at a lower overall cost."<sup>46</sup> However, Duke estimates that the solar facilities in Tranche 1 will not come online until 2020 or 2021.<sup>47</sup> Sierra Club would like to see the program online sooner than that. But as proposed, Duke would have 2-3 years to develop its on-bill crediting system. This should be more than enough time to develop a workable and affordable billing solution. Duke has also indicated that it has considered hiring a third-party vendor with community solar experience to assist in the development of a billing system at a reasonable price.<sup>48</sup> For

---

<sup>43</sup> *Id.*; see also National Renewable Energy Laboratory, A Guide to Community Shared Solar: Utility, Private, and Nonprofit Project Development, at pp. 5, 44-46, available at <https://www.nrel.gov/docs/fy12osti/54570.pdf>.

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

<sup>45</sup> Duke Response to Public Staff Data Request 1-4, p. 3.

<sup>46</sup> Community Solar Proposal, at p. 11.

<sup>47</sup> *Id.* at p. 6.

<sup>48</sup> Duke Response to Public Staff Data Request 1-4.

these reasons, Sierra Club requests that Duke be required to provide customers an on-bill crediting mechanism for Tranche 1.

g. Duke's Treatment of RECs

Duke proposes to retire the RECs produced by the community solar facilities on behalf of customers.<sup>49</sup> Although Duke's proposal does not provide subscribers the option to own the RECs produced by the facility, Sierra Club agrees that because the RECs represent the renewable and environmental attributes of the community solar generation, if subscribing customers subsequently sold RECs generated from the project, they would lose the ability to claim ownership of those attributes. Sierra Club also acknowledges that because a REC represents 1 MWh of renewable energy generation, a single community solar block (generating approximately 35 kWh per month) would only generate a REC every 28 months. As a result, the potential economic benefit of owning the RECs for most subscribers would likely not be substantial. Sierra Club also emphasizes that Duke should strive to negotiate the lowest possible REC prices in order to minimize costs and maximize benefits to community solar subscribers.

h. Duke's 75-mile Exemption Request

A customer subscribing to a community solar facility must be located in the same county or a contiguous county as the community solar energy facility.<sup>50</sup> The Companies may request Commission approval for an exemption of this rule, and the Commission may approve the request for a facility located up to 75 miles from the county of the subscribers if the Commission deems the exemption to be in the public interest.<sup>51</sup> Duke requests such an exemption in its Proposal, stating that the Companies believe the

---

<sup>49</sup> Community Solar Proposal, at p. 16.

<sup>50</sup> G.S. § 62-126.8(c); Commission Rule R8-72(e)(4).

<sup>51</sup> *Id.*

Program has the best chance of success if it is marketed in or near urban areas, where more potential subscribers are located, while having the flexibility to site projects within a large enough area nearby those urban locations to permit lower development costs.<sup>52</sup>

Duke states that the requested exemption is in the public interest because customer participation is vital to the Program's success.<sup>53</sup>

Sierra Club agrees that increasing the permissible proximity between a community solar project and a subscriber may provide the Companies greater flexibility in establishing a lower-priced PPA, which is of paramount importance for program success. However, Sierra Club believes that Duke's request for an exemption is premature. Before granting Duke's request, Sierra Club recommends that Duke be required to demonstrate that the exemption will result in a net decrease in subscription costs. Sierra Club notes that if the Commission grants the requested exemption, the geographic area eligible for participation will increase significantly.<sup>54</sup> Before receiving Commission approval of the exemption, the Companies should be required to demonstrate that any increase in marketing costs or other administrative costs required to reach a broader geographic area will not result in a net increase in subscription costs for customers. An exemption that results in increased program costs would not be in the public interest and should be rejected.

i. Low-to-moderate Income Customer Participation

---

<sup>52</sup> Community Solar Proposal, at p. 6.

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

<sup>54</sup> Duke Supplemental Response to Sierra Club Data Request 1-4. Duke provided webinar slides demonstrating the geographic areas that may be included in community solar customer solicitation if the 75-mile exemption is granted. Duke's response and the respective slides are attached hereto as Attachment 5.

Duke's Proposal does not include a program component that will increase access for low-to-moderate income ("LMI") customers.<sup>55</sup> An LMI program component would assist these customers in overcoming capital, credit, and other financial barriers to participation they often face, and it would be in the public interest.

Duke states that it intends to "evaluate the potential for low income customers to access the program in the future through lowered costs due to learning and scale, as well as partnerships with outside organizations."<sup>56</sup> But Duke has not demonstrated why it is unable to consider an LMI component in Tranche 1. Sierra Club recommends that Duke include an option for community solar subscribers to donate an additional \$5, \$10, \$20, or \$50 per Shared Solar block to assist LMI customers who may be unable to otherwise participate in the program. A community solar customer survey Duke conducted in 2017 found that at least 13% of customers would be willing to substantially increase their upfront subscription cost from \$250 to \$375 (\$125 increase per subscription) to provide assistance to LMI customers as part of their subscription fee.<sup>57</sup> Sierra Club considers providing subscribers a range of smaller donation options to be a reasonable and appropriate means of promoting LMI community solar access in Tranche 1 within the parameters of H.B. 589, and based on Duke's survey, Sierra Club anticipates that many subscribers would choose to donate at the levels Sierra Club has recommended.<sup>58</sup>

---

<sup>55</sup> Community Solar Proposal, at pp. 11-12.

<sup>56</sup> *Id.*

<sup>57</sup> Duke Response to Public Staff Data Request 1-17. Duke conducted a survey in September 2017 with customers across the Company's utilities. The relevant slide is attached hereto as Attachment 6.

<sup>58</sup> *E.g.* The Sacramento Municipal Utility District's ("SMUD") Community Solar Program allows customers to opt-in to monthly donations to support LMI community solar projects and education. Support options include: 1) "Sponsors" pay an extra \$5 per month on electric bill to support Community Solar; 2) "Leaders" pay an extra \$9 per month on electric bill to support Community Solar; and 3) "Champions" are organizations that make donations to support Community Solar. <https://www.smud.org/en/Going-Green/Community-Solar>.



This payment would be entirely optional for subscribing customers, but revenue generated from Shared Solar customer donations would be used to decrease program costs for LMI customers. This structure would also ensure that funds for the LMI component would come solely from community solar program participants, not other customers. Sierra Club recommends initially carving out 5% of the program for LMI customers. Depending on community solar customers' contribution to the LMI component, Duke could allocate donations to reduce community solar block prices by a certain percentage for applicable LMI customers. If the LMI component did not raise enough money to fill the 5% allocation, any remaining blocks would be re-allocated to the general community solar program. Sierra Club believes that for Tranche 1, this structure will offer a simple way to provide benefits to LMI customers without requiring financial contribution from non-participating customers. This approach could be modified in future community solar programs based on participation and success.

To serve the public interest, Sierra Club also recommends that Duke be required to further evaluate additional LMI program components for Tranche 1. For example, the North Carolina Clean Energy Technology Center published a report in March 2018 on LMI community solar models, citing a number of additional mechanisms for increasing participation options for LMI customers, including (1) solar developer donations and support, (2) leveraging Federal Assistance Program, Housing Assistance Program, or other funding opportunities, (3) or applying revenue from voluntary utility bill roundup programs, among others.<sup>59</sup> The Interstate Renewable Energy Council ("IREC") also published a 2016 report evaluating a variety of opportunities for increasing community

---

<sup>59</sup> North Carolina Clean Energy Technology Center, Community Solar Opportunities for Low to Moderate Income Households in the Southeast, at pp. 12-16 (March 2018), available at [https://nccleantech.ncsu.edu/wp-content/uploads/Community-Solar-LMI-Report-3\\_27\\_18.pdf](https://nccleantech.ncsu.edu/wp-content/uploads/Community-Solar-LMI-Report-3_27_18.pdf).

solar access for LMI customers.<sup>60</sup> Finally, Sierra Club recommends that Duke consider ways to coordinate LMI community solar efforts with low-income energy efficiency programs.<sup>61</sup>

j. Portability and Transferability

Commission Rule R8-72(c)(1)(iii) requires Duke to include information on the treatment of subscriptions if a subscriber moves within or outside of Duke's service territory. Duke proposes to allow subscribers to continue to receive annual credits for the duration of the program if they relocate outside of the county or contiguous county, regardless of their new location.<sup>62</sup> Sierra Club appreciates Duke's proposed flexibility in permitting subscription portability. Sierra Club notes, however, that if the Commission requires Duke to provide customers monthly on-bill community solar credits rather than annual payments as Sierra Club has recommended, Duke may not be able to allow customers who relocate outside of Duke's service territory to maintain their subscription. While this may limit the scope of portability that Duke has proposed, Sierra Club recommends that customers moving outside of Duke's service territory also have the option to transfer their subscription to another customer.

Duke's Proposal currently limits transferability to "cases where an unforeseen event, such as death or divorce, adversely impacts the original subscriber's ability to receive payments under the Program."<sup>63</sup> Sierra Club recommends that Duke extend transferability to customers who move outside of Duke's service territory as well.

---

<sup>60</sup> Interstate Renewable Energy Council, Shared Renewable Energy for Low-to Moderate-Income Consumers: Policy Guidelines and Model Provisions (2016), available at <https://irecusa.org/publications/shared-renewable-energy-for-low-to-moderate-income-consumers-policy-guidelines-and-model-provisions/>.

<sup>61</sup> See, e.g. *Id.* at p. 15.

<sup>62</sup> Community Solar Proposal, at p. 13.

<sup>63</sup> *Id.*

## CONCLUSION

As described herein, Sierra Club is concerned that the proposed Community Solar Program does not comply with G.S. § 62-126.8 and Commission Rule R8-72 and will not establish a successful community solar program. Duke has the ability to substantially reduce subscription costs and to develop a program that will provide meaningful community solar access to its customers, including those of low-and-moderate incomes. Sierra Club requests that the Commission order Duke to revise its Community Solar Proposal, with stakeholder input, to develop a more robust community solar program.

Sierra Club respectfully submits these initial comments for the Commission's consideration.

Respectfully submitted this 13<sup>th</sup> day of April, 2018.

s/Peter D. Stein  
Peter D. Stein  
N.C. Bar No. 50305  
SOUTHERN ENVIRONMENTAL LAW CENTER  
601 W. Rosemary Street, Suite 220  
Chapel Hill, NC 27516  
Telephone: (919) 967-1450  
Fax: (919) 929-9421  
pstein@selcnc.org

*Attorney for the Sierra Club*

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Initial Comments of the Sierra Club, as filed today in Docket Nos. E-2, Sub 1169 and E-7, Sub 1168, has been served on all parties of record by electronic mail or by deposit in the U.S. Mail, first-class, postage prepaid.

This 13<sup>th</sup> day of April, 2018.

s/ Peter D. Stein

# Attachment 1

Public Staff  
Community Solar Program  
Public Staff Data Request No. 1  
Item No. 1-11  
Page 1 of 1

**Request:**

Please explain if the Company has considered contracting with a QF that will be interconnected prior to the approval of the program.

**Response:**

The Companies would not have signed a power purchase agreement (PPA) with a developer before the Commission approved the Program, in case the Commission made a change to the Program Plan. Under the Program's current design, the Company will not execute a PPA until it has been determined that sufficient customers have committed to subscribing to the facility to justify moving forward with Tranche 1.

The Company did review the interconnection queue for projects that could be used for Shared Solar. Due to the geographic limitations on the Program included in G.S. 62-126.8, the Company focused on projects in or adjacent to Buncombe, Durham, Mecklenburg and Wake Counties. There were no projects under 5MW in or adjacent to Buncombe County. The Companies contacted developers with projects under 2MW in and adjacent to Wake County, but all of those projects had secured legally enforceable obligations during 2016 and were not willing to negotiate their PPA price to become attractive to potential shared solar customers. As a result of these interactions, the Companies did not approach the developers in Mecklenburg and Durham Counties with projects under 5MW currently in the interconnection queue.

# Attachment 2

Public Staff  
Community Solar Program  
Public Staff Data Request No. 1  
Item No. 1-3  
Page 1 of 1

**Request:**

Please provide supporting calculations for the \$420 subscriber credit referenced on page 10 of the Program Plan. In addition, please provide sample calculations showing a Shared Solar subscriber's monthly cash flow over the 20 year contract, for the following scenarios (please provide working spreadsheets):

- a. 1 block (220 W)
- b. 5 blocks (1,100 W)
- c. 25 blocks (5,500 W)

**Response:**

The numbers used in the filing were for illustrative purposes only. However, the estimate of \$420 in subscriber credits was derived by multiplying the assumed avoided cost rate (see answer to PSDR1-5 for details on the derivation of the avoided cost rate) by the monthly block size and multiplying the resulting monthly credit by 240 (240 months being the duration of the 20 year program term). The avoided cost rate used for the filing was \$50/ MWhr. This amount was multiplied by the block size of 35 kWhrs (and divided by 1000 to convert MWhrs to kWhrs). This resulted in a monthly credit of \$1.75. This amount was multiplied by 240 to arrive at a total of \$420 in credits over the 20 year term.

Attached is a spreadsheet that provides the subscriber's projected monthly cash flows for the three scenarios given.



PSDR1-3  
supplemental spreads



# Attachment 3

Sierra Club  
Community Solar Program  
Sierra Club Data Request No. 1  
Item No. 1-11  
Page 1 of 1

**Request:**

Reference Program Application, p. 15:

“The Companies have projected marketing costs of approximately \$860,000 for DEC and DEP combined, associated with implementation of Tranche 1. The Companies will use digital and printed communications through the Duke Energy website, email, press releases, newsletters, social media, direct mail, webinars, internal and external stakeholders, and any combination of or all of those methods to market the Program.”

Please provide all estimates, market quotes, research, communications, and research that support the total marketing costs of the Shared Solar program.

**Response:**

The marketing budget quoted in the filing was based on an estimated power purchase agreement (PPA) price of \$65/MWh for a project. However, the actual PPA price will not be known until the project is chosen. A PPA price in that range would make the project a premium project that would not deliver economic benefits to participating customers. These programs are more difficult to market than programs that do have a payback period. As a result, these types of programs require more marketing dollars. Another driver of the development of the marketing plan is that Community Solar is a new idea in North Carolina for the majority of customers. When a concept is unfamiliar, marketing serves two functions- educational and persuasive. Therefore, it may take more impressions for a customer to become comfortable with the program.

The Companies will not have a marketing budget set until the project is chosen. There are many factors, including price, market size, expected partnerships with outside organizations and project attributes, that will impact this.

If a project can be lower priced and save customers money, it will cost less per block to acquire customers. Learnings from the first projects would help lower marketing expenses on future programs, regardless of if they save customers money. The attachment shows how a budget of ~\$100/per customer would be spent and assumptions.



Marketing Plan for  
Data Request.pptx

## Marketing Plan

### Assumptions:

- One utility
- Premium or very low credit program
- ~\$100/customer to acquire
- Each customer purchases only one block
- No marketing assistance from outside organizations.

CHANNEL	COST
Campaign   Direct Mail	\$200,000.00
Campaign   Email	\$2,500.00
Campaign   SEO/SEM	\$50,000.00
Campaign   Facebook	\$25,000.00
Campaign   Podcasts	\$25,000.00
Content Marketing   Illumination	\$1,750.00
Content Marketing   Residential Newsletter	\$1,750.00
Content Marketing   Small Business Newsletter	\$1,750.00
Digital Asset   Flipboards	\$2,500.00
Digital Asset   HERO Banners	\$2,500.00
Events   Promotional	\$50,000.00
Radio   NPR	\$50,000.00
Relationship Marketing   Stakeholders	\$5,000.00
Website   Duke Energy	\$10,000.00
	\$427,750.00

**Request:**

Reference DEC and DEP's Joint Petition for Approval of Community Solar Program Plan under N.C. Gen. Stat. § 62-126.8 ("Program Application"), p. 2:

"The Companies have diligently researched the best practices of other community solar programs, discussed the scope of the Program with and solicited input from interested parties, including the Public Staff of the North Carolina Utilities Commission ("Public Staff"), the Sierra Club, and the Smart Energy Power Association, and surveyed Duke Energy customers to gauge potential interest in participation."

Please provide a copy of any survey used, communication with the Companies' customers, or other documents used to gauge potential customer interest in community solar participation. Please provide a list of all community solar programs that the Companies assessed to determine program design and best practices.

**Response:**

DEC and DEP (collectively, "Duke Energy") employees involved in the process of developing NC Shared Solar have knowledge of the industry that predates developing the program. Duke Energy employees have been involved in Shared Solar since South Carolina passed Act 236 in 2014. Duke Energy has also been working to introduce Shared Solar in Florida since 2016.

See Duke's response to PSDR 1-17 for the pertinent surveys.

In addition to those materials cited in the Joint Petition for Approval of Community Solar Program Plan and in the Rulemaking proceeding (Docket No. E-100, Sub 155), Duke Energy reviewed the following in gauging potential customer interest in Community Solar Programs and in assessing other Community Solar Programs.

SEPA Community Solar Report - Conducted with the Shelton Group in 2015.

Community Solar- Greenlinks Report - Study passed to the Company by Sierra Club.

Entergy's Community Solar filing including insight from other utilities, especially around the handling of RECs.

Master Community Solar Report - Although the one attached is dated after the NC Shared Solar filing, the report has been in development for some time, and Duke was able to review drafts while developing its Community Solar Program Plan.

# Attachment 4

Utility Benchmarking - Internally developed spreadsheets looking at other Investor Owned Utilities.



SEPA Community  
Solar Report Final.pdf



Community Solar -  
Greenlinks report NC\_



Entergy Filing.pdf



Master Community  
Solar Report Draft 3.



Utility  
Benchmarking.xlsx



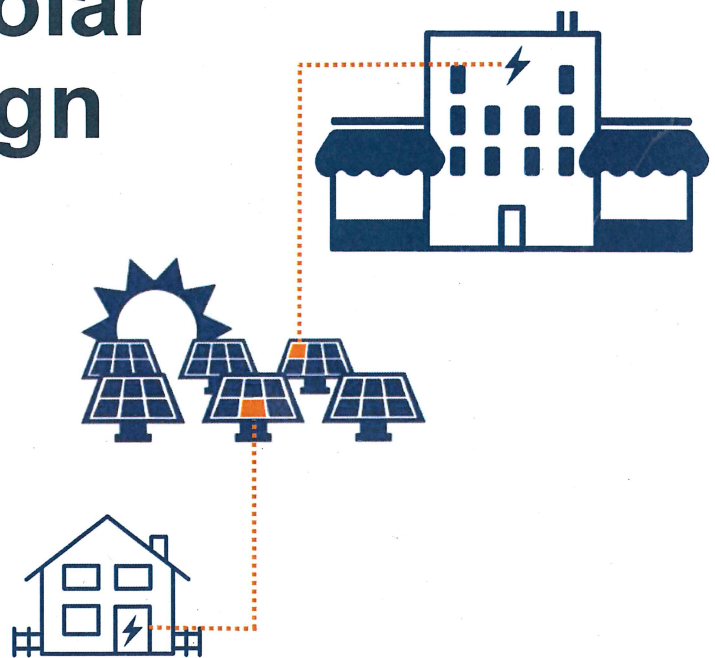
Utility Benchmarking  
II.xlsx

# Community Solar Program Design Models

March 2018



Smart Electric  
Power Alliance





## About This Report

### History

In 2015, SEPA developed the Community Solar Program Design Models report which provided an overview of the community solar market, findings from a survey of program administrators, and our initial program design decision tree. Now in 2018 we have updated this report with new data on the community solar market, and lessons learned over the past two years.

### “Community Solar” Definition

In this report, SEPA defines a community solar program, also known as shared solar, as a voluntary business model where multiple subscribers pay for a share of a specified offsite solar project and receive credit on their electricity bill for their portion of power produced.

### “Program Administrator” Definition

Many programs are developed by multiple organizations who share development responsibilities. For simplicity, SEPA defines the program administrator as the primary organization responsible for managing customer subscriptions. Some portions of this report split the community solar market into programs administered by the utility and those administered by third party providers.



### Survey Partner

The Program Administrator Survey Findings section of the report was developed in collaboration with the Coalition for Community Solar Access (CCSA). CCSA is a national coalition of businesses and non-profits working to expand consumer choice and access to clean, local, affordable energy to all Americans through opening, protecting, and serving markets for community solar.



### Authors

Dan Chwastyk, Manager SEPA  
Jared Leader, Associate SEPA  
Jeff Cramer, Executive Director CCSA  
Mason Rolph, Intern CCSA

© Smart Electric Power Alliance, 2018. All rights reserved. This material may not be published, reproduced, broadcast, rewritten, or redistributed without permission.



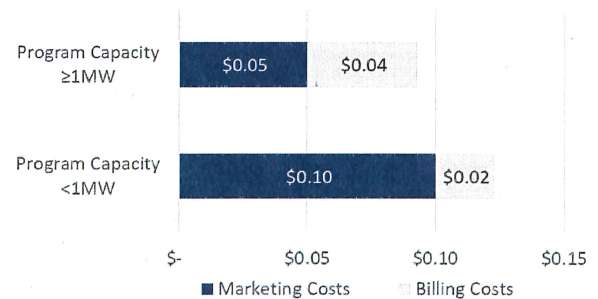
## What are the Additional Costs of a Program

SEPA includes considering both the cost of customer acquisition and customer billing and crediting as administrative costs. These are effectively the additional cost to make a standard solar project a community solar one. In general, community solar administrative costs experience economies of scale. The median program with a capacity above 1 MW had just 9 cents per Watt in administrative costs as compared to 12 cents per Watt for the median program above this size threshold.

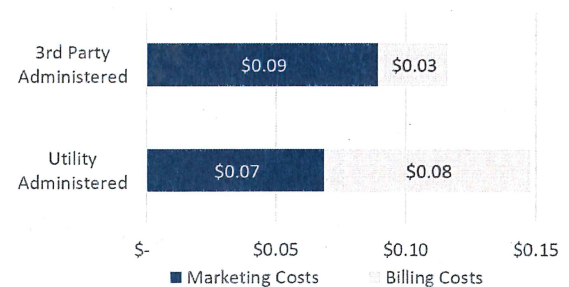
The program administrator also seemed to effect the costs. While third party administered programs spend more on customer acquisition, utility administered programs spend more on billing. Billing costs for utility administered community solar programs were 4 cents per Watt more on average than those administered by third parties. Marketing, or customer acquisition, costs for third party administered community solar programs were on average higher those administered by utilities. Of those surveyed, third party administered programs spent two cents per Watt more on average on marketing costs than utility administered programs.

<sup>6</sup>For 3<sup>rd</sup> party administered programs, billing costs does not include those incurred by utility

**Figure 14. Median First Year Administrative Costs by Program Size (\$/W)**



**Figure 15. Median First Year Administrative Costs by Administrator (\$/W)**



# Attachment 5

**Request:**

Reference Program Application, p. 5:

“The Companies plan to commence stakeholder engagement at the time of the filing of this Program Plan and to publicize through internal and external stakeholder channels the types of projects they would like to see submitted into the interconnection queue for the program. The Companies will then identify locations that could facilitate both lower solar costs and, potentially, subscribers willing to commit to larger subscriptions as a way to lower projected marketing expenses. Subsequent to Commission approval of the Program, the Companies will release an RFP, finalize development of marketing materials for the Program, and launch the marketing effort for the Program.”

Please describe and provide any documents regarding these “internal and external stakeholder channels.” Please define the “types of projects” that will be prioritized and/or communicated to stakeholders.

**Supplemental Response (March 16, 2018):**

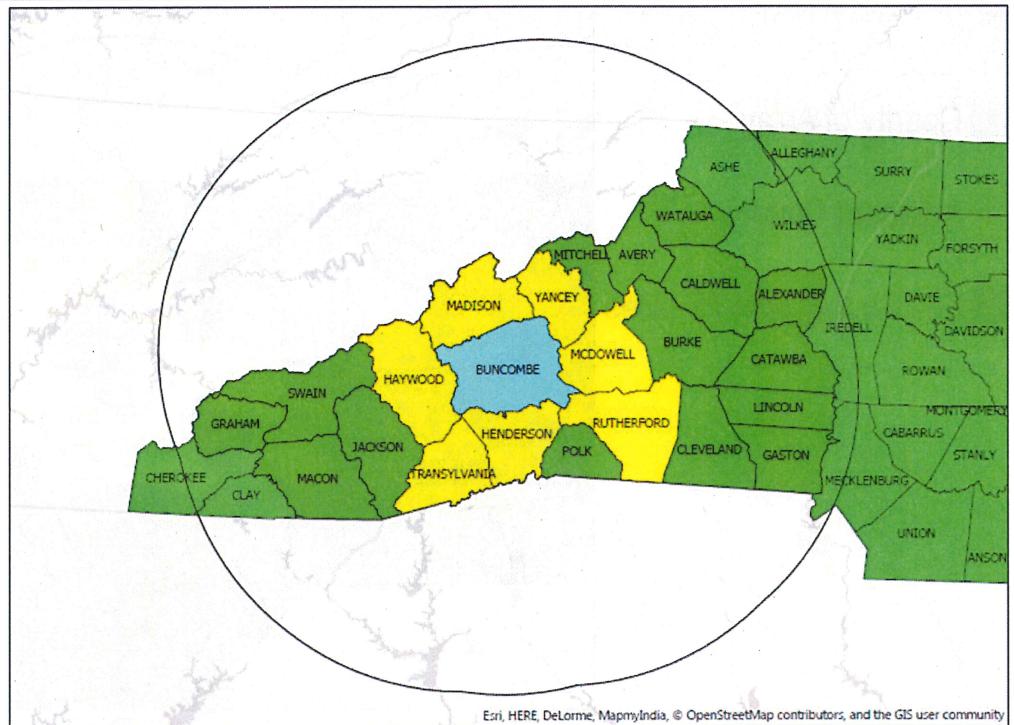
Please see the attached presentation.



NC Shared Solar  
Community Presentat

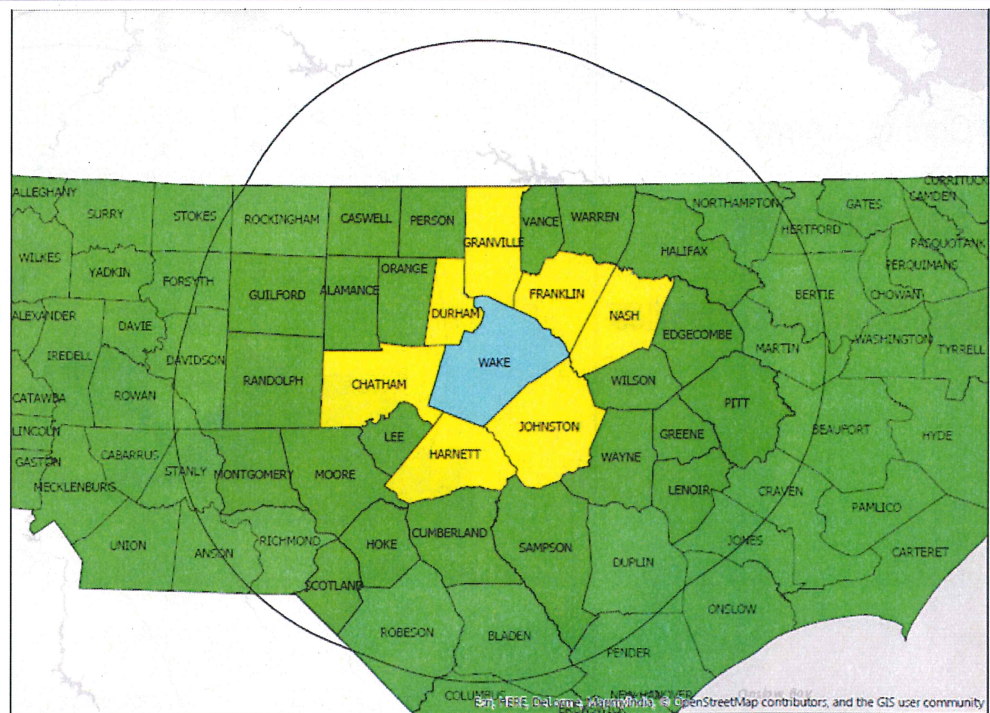
## North Carolina Shared Solar Site Selection

- County of Array
- Adjacent County
- Full County w/in 75 Miles



## North Carolina Shared Solar Site Selection

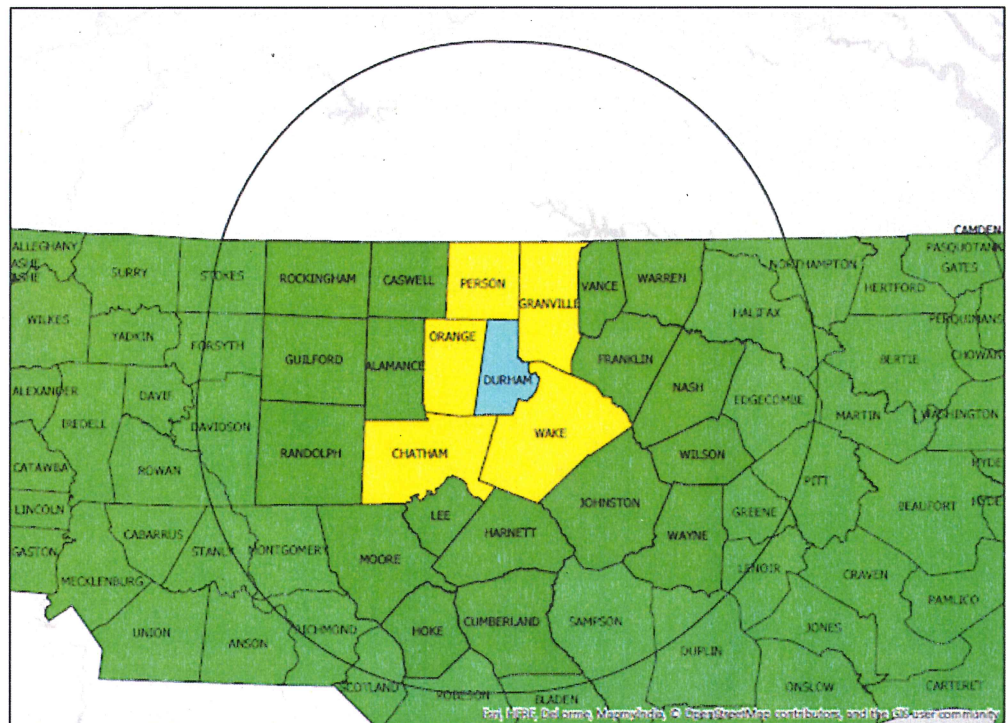
- County of Array
- Adjacent County
- Full County w/in 75 Miles





# North Carolina Shared Solar Site Selection

- County of Array
- Adjacent County
- Full County w/in 75 Miles



# Attachment 6

Public Staff  
Community Solar Program  
Public Staff Data Request No. 1  
Item No. 1-17  
Page 1 of 1

**Request:**

Page 2 of the filing notes that Duke Energy customers were surveyed to gauge potential interest in participation. Please provide the survey, the results of the survey, and the details regarding the deployment of the survey.

**Response:**

Attached please find four customer research efforts.

1-Conducted in September 2017 with customers across the Company's utilities.



10112017  
Community Solar Pan

2- Conducted with Florida customers in 2016. The Company believes the 2017 survey to be more relevant, but did use the 2016 survey to help formulate the later survey.



DEF Shared Solar  
Customer Survey Sur

3- Conducted across the Company's utilities in 2016. Some slides covered topics beyond the scope of this docket and this data request. Those slides have been removed.



SSD Concept Study  
For Data Request.pp

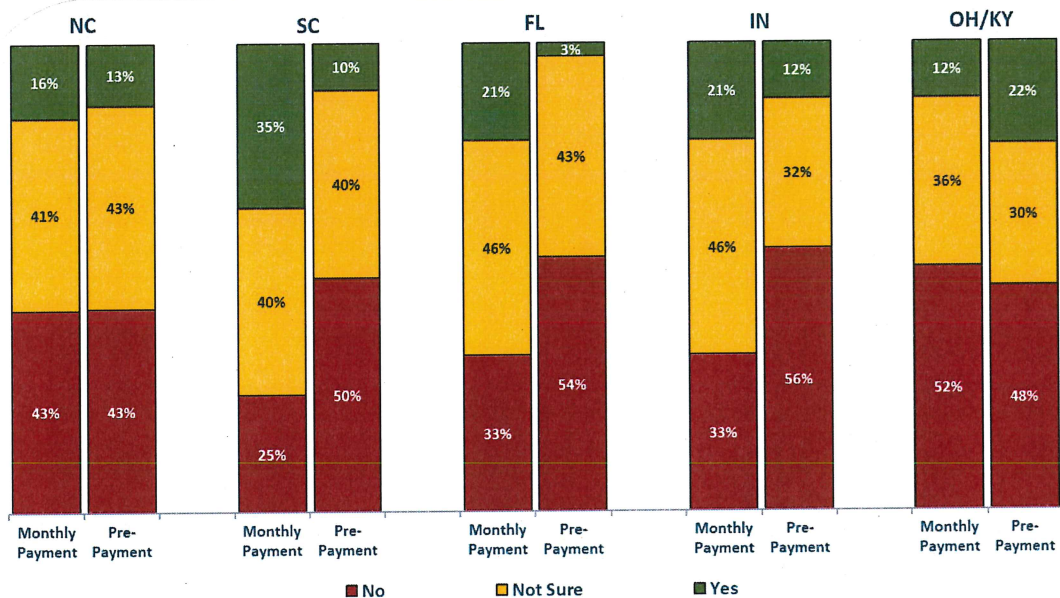
4- Focus groups conducted across the Company's utilities in 2015. Some slides covered topics beyond the scope of this docket and this data request. Those slides have been removed.



Customer Focus  
Groups - Qualitative f



### Willingness to Subsidize Low Income Participants Residential by State



Note: Due to small sample sizes, caution should be used when interpreting results.

Q: If you were to participate in this proposed program, would you be willing to pay a higher monthly subscription fee of \$10.25 to help subsidize program participation for low-income customers?

Q: If you were to participate in this proposed program, would you be willing to pay a higher one-time enrollment fee of \$375 to help subsidize program participation for low-income customers?