

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-2, SUB 1159
DOCKET NO. E-7, SUB 1156

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

| | |
|--|-----------------|
| In the Matter of | |
| Joint Petition of Duke Energy Carolinas, |) |
| LLC, and Duke Energy Progress, LLC, for |) |
| Approval of Competitive Procurement of |) |
| Renewable Energy Program |) |
| | ORDER APPROVING |
| | PRO FORMA PPA |

BY THE COMMISSION: On July 2, 2019, in the above-captioned proceeding, the Commission issued an Order directing Duke Energy Carolinas, LLC (DEC), and Duke Energy Progress, LLC (DEP) (together, Duke) to make modifications to the Competitive Procurement of Renewable Energy (CPRE) Program Plan (CPRE Program Plan) filed jointly by the two electric public utilities and accepting the CPRE Program Plan, as modified. Among the modifications that the Commission directed Duke to make to the CPRE Program plan were adjustments to the schedule for the Tranche 2 CPRE RFP Solicitation to accommodate the establishment of updated avoided cost rates and rate methodologies in the 2018 biennial avoided cost proceeding (Docket No. E-100, Sub 158). The Commission also directed Duke to host monthly meetings with interested stakeholders as a measure of relief for those parties that have requested more transparency and information regarding Duke's preparation for the Tranche 2 CPRE RFP Solicitation and as a forum for resolving issues informally in advance of the opening of the Tranche 2 CPRE RFP Solicitation.

On July 15, August 15, September 15, and October 15, 2019, Duke filed reports on the monthly stakeholder meetings as required by the Commission's July 2 Order.

On September 16, 2019, Duke submitted to the Commission for approval its final *pro forma* PPA proposed to be used in the Tranche 2 CPRE RFP Solicitation.

On October 7, 2019, the Commission issued an Order requesting that the parties file comments related to the applicability of the Solar Integration Services Charge (SISC) that was proposed in the 2018 biennial avoided cost proceeding (Docket No. E-100, Sub 158).

Also on October 7, 2019, in Docket No. E-100, Sub 158, the Commission issued a Notice of Decision (NOD) announcing the Commission's decisions related to the calculation of avoided capacity rates and avoided energy rates that are necessary to ensure the cost-effectiveness of procured new renewable energy resources in the CPRE Program.

On October 15, 2019, Duke filed a notice to the Commission that the Tranche 2 CPRE RFP Solicitation opened that day. Included with Duke's notice was the *pro forma* PPA that Duke intends to use in the Tranche 2 CPRE RFP Solicitation, subject to revisions that are dependent upon the Commission's ultimate resolution of issues related to the applicability of the SISC in the CPRE Program.

On October 17, 2019, in Docket No. E-100, Sub 158, the Commission issued a Supplemental Notice of Decision (SNOD) giving notice of the Commission's decisions related to the SISC.

On October 18, 2019, Duke, the North Carolina Sustainable Energy Association (NCSEA) and the North Carolina Clean Energy Business Alliance (NCCEBA), First Solar, Inc. (First Solar), and the Public Staff filed comments.

On October 29, 2019 Duke, NCSEA and NCCEBA, and the Public Staff filed reply comments.

On December 2, 2019, the Commission issued an Order extending the deadline for submission of proposals for the Tranche 2 CPRE RFP Solicitation and rescheduling the December stakeholder meeting.

On January 17, 2020, the Commission issued an Order further extending the deadline for submission of proposals for the Tranche 2 CPRE RFP Solicitation and again rescheduling the stakeholder meeting.

Based upon the foregoing and the entire record herein, and for reasons discussed in detail below, the Commission concludes that Duke's proposed *pro forma* PPA should be approved for use in the Tranche 2 CPRE RFP Solicitation.

SUMMARY OF THE PARTIES' FILINGS

Duke's Reports on the Stakeholder Meetings

In compliance with the Commission's July 2 Order modifying and accepting the CPRE Program Plan, Duke hosted stakeholder meetings in August, September, October, and November 2019 and reported to the Commission through reports Duke filed in this docket. In general, the Commission finds these reports reflect achievement of the Commission's goal to provide more transparency and information about Duke's preparation for the Tranche 2 CPRE RFP Solicitation and to provide a forum for resolving issues informally in advance of the opening of the Tranche 2 CPRE RFP Solicitation. However, Duke did not include the list of areas of agreement and disagreement that the Commission directed Duke to include in these reports; instead, Duke elected to list the questions asked by participants in the stakeholder meetings. The Commission finds that this omission is material, and as a result determines that Duke's reports on the stakeholder meetings are less than fully responsive to the Commission's July 2 Order. Nonetheless, the Commission determines that the reports, along with the other filings

summarized herein, provide the Commission with sufficient information and arguments to identify and resolve the issues in controversy with respect to the Tranche 2 CPRE RFP Solicitation.

Updates to Tranche 2 CPRE RFP Solicitation and *Pro forma* PPA

In its September 16 and October 15 filings, Duke summarizes the changes made to the Tranche 2 RFP and the *pro forma* PPA proposed to be used in Tranche 2, as compared to the Tranche 1 RFP and *pro forma* PPA used in Tranche 1. Duke states that these changes were made with the approval of the IA and most of these changes were made in response to comments received during the pre-solicitation comment period or during the Commission-ordered stakeholder process. Duke further states that the energy storage protocols were revised extensively in response to market participant feedback. With the exception of the energy storage protocols, Duke states that it received a relatively small number of comments and suggested edits to the *pro forma* PPA.

With respect to the RFP, Duke states that the avoided cost rates have been updated with fixed 20-year avoided cost values based on the Commission's NOD issued in Docket No. E-100, Sub 158. Duke further states that it has altered the bid pricing methodology to require that bids be priced as a fixed dollar decrement relative to avoided cost rather than the fixed percentage decrement used in Tranche 1. Duke explains that this change was made after receiving stakeholder feedback and input from the IA, and was discussed at the October stakeholder meeting where no stakeholder expressed objection. Duke next states that the "late-stage proposal" structure authorized in the Tranche 1 CPRE RFP Solicitation was not carried forward to the proposed RFP to be used in Tranche 2, and that this issue was the subject of detailed discussion at the September and October stakeholder meetings. Based on the consensus view of market participants at those meetings, Duke and the IA agreed to support a structure for "advanced stage proposals" to allow projects that have executed Interconnection Agreements to be proposed in Tranche 2 without forfeiting their executed Interconnection Agreement. In addition, Duke states that it reviewed the revised North Carolina Interconnection Procedures with regard to this proposed bid structure and concluded that no further authorization is required to accommodate these proposals. In addition, Duke has identified for the sake of clarity that its T&D Sub-Team necessarily will receive queue numbers to conduct the grouping study that identifies potential network upgrades, and that the receipt of this information may allow for identification of the applicable project company. Despite this reality and the tension it creates with the provisions of Commission Rule R8-71(f)(3), Duke states that it and the IA remain confident that the separation of roles in the evaluation process maintain the fairness and transparency in the process overall.

With respect to the *pro forma* PPA, Duke first notes that the applicability of the SISC remains to be determined by the Commission, but states that in the interest of a timely RFP process Duke developed a set of protocols and measurements by which a winning bidder in the Tranche 2 CPRE RFP Solicitation with a solar facility could avoid or

reduce the SISC by reducing intra-hour volatility.¹ Duke further states that these protocols were posted to the IA website for comment and feedback and were discussed at the September 12 stakeholder meeting. Duke then states that the majority of the comments received with respect to the SISC were general in nature and challenged the validity of the SISC in the first place rather than requesting changes to the protocols. However, Duke states that it did incorporate a number of changes in response to comments on the terms and conditions of the protocols.

As a part of its September 16 filing, Duke argues that the revised *pro forma* PPA is commercially reasonable and will allow Duke to meet the CPRE Program goals through the Tranche 2 CPRE RFP Solicitation. Therefore, Duke requests that the Commission approve the *pro forma* PPA for use in the Tranche 2 CPRE RFP Solicitation. As a part of its October 15 filing, as noted above, Duke states that the SISC issue remains pending before the Commission and that, once the SISC issue is clarified, Duke plans to update the *pro forma* PPA as necessary and file a revised version with the Commission.

Comments on the Applicability of the SISC to the CPRE Program

In response to the Commission's October 7 Order requesting comments, Duke, NCSEA and NCCEBA, First Solar, and the Public Staff filed comments; and Duke, NCSEA and NCCEBA, and the Public Staff filed reply comments.

Duke's Comments

Through its comments, Duke argues that the policy supporting House Bill 589 and the Commission's decision that increased ancillary services costs must be considered in calculating the costs and benefits resulting from the purchase of energy and capacity from solar QFs support application of the SISC to "uncontrolled" solar generating facilities. Duke further argues that not to apply the SISC to uncontrolled solar generating facilities bidding into CPRE would unfairly inflate the value of these renewable energy facilities bids in a manner that discriminates against other renewable resource technologies. Duke further argues that the provisions of N.C.G.S. § 62-110.8(c) grant Duke the authority to consider:

the potential for increased delivered cost to a public utility's customers as a result of siting additional renewable energy facilities in a public utility's service territory, *including additional costs of ancillary services that may be imposed due to the operational or locational characteristics of a specific renewable energy resource technology*, such as nondispatchability, unreliability of availability, and creation or exacerbation of system congestion that may increase redispatch costs.

¹ These protocols are included as Exhibit 11 to the *pro forma* PPA (SISC Avoidance Protocols).

Duke's comments (*quoting* N.C.G.S. § 62-100.8(c)) (emphasis in original). This provision, Duke argues, recognized the potential for CPRE-eligible renewable energy resources to impose increased integration costs such as additional ancillary services and authorized Duke to take such costs into account in implementing the CPRE Program. Duke further argues that if the SISC is not applied to the CPRE Program, its quantification of the SISC (which is lower for DEC than it is for DEP) would result in uncontrolled solar generating facilities bidding into DEP in Tranche 2 being unfairly advantaged by being able to bid at the same price as similar facilities bidding into DEC in Tranche 2, despite the fact that those facilities in DEC impose lower integration costs.

Duke next argues that the SISC Stipulation filed in Docket No. E-100, Sub 158, and the SNOD support application of the SISC to bids in the CPRE Tranche 2 RFP Solicitations and the options for reducing or avoiding the SISC. In support of this argument Duke states that the purpose of applying an average cost rate design, as opposed to incremental cost rate design, would be undermined by the fact that an increasingly significant percentage of the uncontrolled solar generating facilities imposing integration costs on the DEC and DEP systems would not be paying their fair share of the average ancillary services costs. Additionally, Duke details the structure of the SISC Avoidance Protocols, which are intended to allow a controlled solar generator to reduce or avoid the SISC by operating the facility in a manner that materially reduces or eliminates the need for additional ancillary services requirements.

With regard to the question of incorporating the SISC into the avoided cost cap and cost effectiveness evaluation, Duke states that it agrees with the Public Staff's position recommending that the Commission fix the SISC at the average cost "Existing Plus Transition" level for the duration of the Tranche 2 CPRE PPA. Duke argues that this approach is consistent with the Commission's SNOD and will allow Duke to efficiently move forward with CPRE Tranche 2 in a manner that provides certainty to bidders and an effective bid evaluation process that conforms to the Commission's CPRE rules. Duke further states that it also agrees with the Public Staff that the SISC should not be included as a component of the avoided energy cost used to calculate the avoided cost cap. While acknowledging the Commission's conclusion in the SNOD that the SISC should be included in a utility's avoided energy cost calculation, Duke argues that the SISC Avoidance Protocols, which allow for reduction or avoidance of the SISC based on the facility's actual, "as measured" reduction in volatility, justify applying the SISC as a separate charge to "allow the overall compensation to align with actual performance of the solar generator." In summary, Duke views this approach as preferable because it avoids the necessity to make assumptions about a facility's performance over the 20-year PPA period, allows for the incorporation of future technology options during the 20-year PPA period, and avoids the need for a technical decision for purposes of evaluation about whether a facility can reduce volatility based on its technical design. Finally, Duke argues that the SISC should apply to utility-owned facilities in the same manner as non-utility-owned facilities.

NCSEA and NCCEBA's Comments

Through their comments, NCSEA and NCCEBA argue that the SISC was not contemplated to apply to the CPRE program, by law, rule, or statute. Furthermore, NCSEA and NCCEBA argue that the Commission's conclusion in the SNOD that the ancillary services costs incurred by Duke due to solar generation should be included in its avoided energy rate and not as a separate charge, results in the SISC's being included in the avoided cost cap in the CPRE program.

NCSEA and NCCEBA take the position that there is a disconnect between what the CPRE statute allows for in terms of control and dispatch and the issues that Duke and the Public Staff seek to cure with the SISC. NCSEA and NCCEBA interpret N.C.G.S. § 62-110.8 to require that the CPRE facilities be subject to the dispatch and control of Duke and take the position that if an additional ancillary services cost charge is to be incurred, the underlying model calculating such charge should be redone with proper CPRE-focused inputs which include the control and dispatchability allowable by statute which should offset most if not all of the ancillary services costs.

NCSEA and NCCEBA next argue that Duke's SISC Avoidance Protocols must be evaluated, discussed, and negotiated between Duke and the intervenors in this docket. NCSEA and NCCEBA express concern that the protocols limit the technologies that can bring the most benefit to rate payers and the grid. For example, NCSEA and NCCEBA state that the focus of the protocols appears to be "smoothing" to the exclusion of other uses of solar plus storage such as peak-shaving. Thus, NCSEA and NCCEBA call for the Commission, as they did in Docket No. E-100, Sub 158, to open a broad-study, with stakeholders, to allow for the understanding of the potential benefits that a solar facility with incorporated ancillary services can bring to the grid which will offset utility costs and be a benefit to the grid.

Finally, NCSEA and NCCEBA argue that the plain language of N.C.G.S. § 62-110.8 and relevant case law support not applying the SISC to CPRE facilities. In the first instance, NCSEA and NCCEBA again argue that the dispatch and control rights afforded to the utility under the CPRE Program evidences intent that Duke would utilize this authority in a way that limits or eliminates extra ancillary services due to the presence of the CPRE facilities on the Duke utility systems. NCSEA and NCCEBA conclude by pointing to a recent decision of the Ninth Circuit U.S. Court of Appeals, *Californians for Renewable Energy v. Cal. PUC*, 922 F.3d 929 (9th Cir. 2019), in which the court addressed the calculation of avoided costs in the context of state-mandated renewable energy standards, to support their argument that in the context of the CPRE, which is a state-mandated renewable energy procurement standard, the avoided cost must reflect cost actually avoided. Thus, they argue, it does not make sense for the program to include a part of "avoided cost" which is not actually avoided.

First Solar's Comments

Through its comments, First Solar expresses concern that the imposition of the SISC is inconsistent with N.C.G.S. § 62-110.8 and that there are more cost-effective and operationally sound means for Duke to address renewable resource intermittency. First Solar requests that the Commission not authorize the imposition of the SISC on CPRE Program facilities and states that it supports the positions of NCCEBA and NCSEA if the Commission does not accept First Solar's alternatives to imposition of the SISC.

In First Solar's view, the provisions of N.C.G.S. § 62-110.8 that require CPRE Program facilities to be able to be dispatched, operated, and controlled by the utility should result in these facilities being deemed "controlled solar generators" that are exempt from the SISC. First Solar acknowledges that the Tranche 1 CPRE RFP was not structured in this manner and that the facilities that were bid into that RFP were not contracted to be operated in this manner. First Solar recommends that all CPRE facilities in Tranche 2 and going forward be contracted to be operated in this manner, as detailed in its comments. First Solar further argues that the SISC as proposed by Duke frustrates the legislative direction for operational flexibility. Specifically, First Solar argues that Duke incorrectly assumed that the only way to smooth out solar and load variability is to use its "existing thermal fleet to solve for intermittency." Instead, First Solar argues that if the capabilities of solar resources were fully utilized, this unnecessary cost could be avoided and the resulting increase in bid prices for renewable energy facilities, and increased prices for Duke's ratepayers, would be avoided.

First Solar next argues that "utility scale solar assets are inherently highly controllable." First Solar states that utilities such as NV Energy and Hawaiian Electric Company are actively pursuing dispatchable renewable solar assets and compensating the renewable resources to meet system needs effectively. First Solar argues that by actively dispatching renewable resources these utilities have solved multiple operational issues such as more efficiently operating all of their resources at lower costs, reducing curtailment of solar resources, and proactively addressing renewables intermittency. First Solar further argues that Duke should take advantage of existing technology and more cost effectively incentivize solar resources to directly address and mitigate intermittency impacts rather than "imposing a punitive SISC to cover a more expensive method of addressing intermittency." Thus, First Solar recommends that the Commission direct Duke to eliminate the SISC for CPRE Program purposes and, at a minimum, "seek to procure the flexible dispatch services from CPRE Program facilities," and to incorporate solar forecasting and scheduling of assets in fifteen-minute increments. These changes, First Solar argues, can be implemented for CPRE Tranche 2 through modest PPA modifications and discrete operational changes, which would make that solicitation more consistent with the legislative mandate for the CPRE Program.

First Solar next argues that inverter-based renewable resources, such as utility-scale solar, are more effective than traditional generation assets in delivering ancillary services. In support of this argument, First Solar cites to its comments previously filed in this proceeding. Again, First Solar argues that this type of "resource flexibility" is

consistent with the CPRE Statute and suggests that Duke can receive ancillary services from the CPRE solar facilities at lower costs and with avoidance of increased air emissions that would result from Duke providing these services with its “legacy inefficient fossil assets.” Finally, First Solar argues that solar forecasting can provide a highly accurate picture for solar generation as the operating interval gets closer to the time of delivery and, therefore, recommends that Duke be required to add an hour-ahead forecast in fifteen minute granularity to allow Duke to better understand the ramping needs of the system.

The Public Staff’s Comments

Through its comments, the Public Staff addressed the questions raised in the Commission’s October 7 Order requesting comments by citing to the testimony it filed in Docket No. E-100, Sub 158 in support of the settlement between Duke and the Public Staff related to the application of the SISC to avoided cost rates. In addition, the Public Staff states that it has had additional discussions with Duke since the filing of that settlement. The Public Staff further states that it believes that the most straightforward and administratively efficient way to incorporate the ancillary services cost of adding incremental solar through the CPRE Program is through application of the SISC, coupled with a mechanism that allows bidders to avoid the application of the SISC if they can sufficiently demonstrate that the facility will operate in a manner that “materially reduces or eliminates the need for additional ancillary service requirements.” Such mechanisms, the Public Staff states, were being discussed in the CPRE Tranche 2 Stakeholder discussions, including the proposal by Duke to include a Solar Site Volatility Metric to mitigate solar variability and to ensure that the reduction in variability was actually achieved.

With regard to the incorporation of the SISC into the cost-effectiveness limitation in the CPRE Program, the Public Staff states that it believes that the IA must set the limitation on eligible projects using a forecast of avoided cost rates that is consistent with the avoided cost rates established in the 2018 biennial avoided cost proceeding. Accordingly, the Public Staff supports requiring bidders to incorporate the costs of the SISC into their bid, with the understanding that uncontrolled solar generators selected in Tranche 2 will be responsible for payment of the SISC. Further, the Public Staff argues that, since bidders may choose to make different assumptions regarding their ability to mitigate the applicability of the SISC to their project, it may be most appropriate for the IA to assume that all bidders will be subject to the full SISC, unless they meet the necessary steps to have the SISC reduced or waived for a given month. Because the SISC will be paid by all uncontrolled solar generators as a decrement to the bid price, the Public Staff argues that it is not necessary for the IA to incorporate the SISC into the evaluation process. This, the Public Staff concludes, would treat all bidders equitably and shift the risk to bidders to meet the volatility reduction targets as well as provide bidders a price signal to incentivize the development of projects that have reduced volatility.

The Public Staff next details the calculation of the appropriate amount of the SISC that should apply in DEC and DEP, again, basing its views upon the settlement and

supportive testimony filed in Docket No. E-100, Sub 158. Applying the same logic to the 20-year PPA under the CPRE Program, the Public Staff states that its primary concern is to ensure the cost-effectiveness limitation in N.C.G.S. § 62-100.8(b)(2) is maintained. However, the Public Staff notes that quantification of integration costs over a 20-year term cannot be accomplished with precision, and states that the goal should be to ensure that this quantification is sufficiently reasonable so that customers will be indifferent with regard to whether the costs were captured in the SISC or separately recovered by the utilities. Balancing the interests of timely and cost-effective implementation of the CPRE Program and providing better cost certainty to potential market participants, the Public Staff believes that it would be appropriate to consider using a fixed SISC for CPRE Tranche 2 purposes, in the same amount proposed as the initial SISC that was included as a part of the SISC Stipulation filed in Docket No. E-100, Sub 158. While the Public Staff acknowledges that this approach may not fully capture changes in the integration costs over the 20-year PPA that result from higher solar penetration rates, the Public Staff argues that it would assign the portion of these costs that is currently known and measurable to the bidders, as well as provide a clear price signal to bidders to incentivize them to reduce the volatility of their generation.

With regard to the question of dispatch and control rights, the Public Staff notes that the *pro forma* PPA used in Tranche 1 and the *pro forma* PPA proposed for use in Tranche 2 both require compliance with system operator control instructions, including allowance for curtailment without compensation up to 5% of expected annual output in DEC and 10% in DEP. The Public Staff states that these provisions are designed to ensure that the selected facilities are operated in the same manner as the utility's own generating resources and efficiently integrated into the utility's overall system operations, but they do not capture the additional ancillary services costs incurred by the utilities as a result of adding additional intermittent generation to their system, whether through CPRE or other procurements. The Public Staff further states that while these curtailment and dispatch rights are designed to allow the utilities to economically dispatch the projects, they do not provide the utilities with sufficient real-time control of the resources (including their own intermittent generation) to offset the additional ancillary service costs resulting from the volatility of intermittent resources. The Public Staff then states that it is appropriate both in the CPRE context and in the context of other future utility resource acquisitions for the additional ancillary service requirements of any facility be considered. In addition, the Public Staff also states that it believes that in the event the utilities seek to add future generation resources outside of CPRE that trigger additional load-following requirements, it is appropriate for those additional ancillary service costs to be considered as part of the application for a certificate of public convenience and necessity for the facilities. The Public Staff does not, however, interpret this requirement to mean that the ancillary service costs associated with the operation of existing utility-owned resources should be reconsidered as part of the CPRE process.

In conclusion, the Public Staff reiterates its support for application of the SISC or a comparable charge, to new solar facilities that are the subject of proposals in the CPRE Program, unless the bidder can demonstrate that the facility is capable of operating, and contractually agrees to operate, in a manner that materially reduces or eliminates the

need for additional ancillary service requirements. The Public Staff states that it believes that this approach is consistent with the intent of N.C.G.S. § 62-110.8.

Duke's Reply Comments

Through its reply comments, Duke states that it and the Public Staff recommend that the Commission authorize the SISC to be applied in the Tranche 2 CPRE RFP Solicitation as a fixed charge for the duration of the 20-year CPRE PPA term at \$2.39/MWh in DEP and \$1.10/MWh in DEC. Duke further states that it and the Public Staff also agree that winning bidders will be responsible for paying the SISC unless the CPRE solar generator is operated as a "controlled solar generator" that materially reduces or eliminates the intra-hour volatility of its output and that this approach is the most straightforward and administratively efficient way to incorporate the ancillary services cost of adding incremental solar through the CPRE Program. Duke argues that the fixed SISC charge addresses concerns expressed by NCCEBA and NCSEA regarding a variable and uncapped charge, provides certainty to market participants, and aligns with the Commission's SNOD issued in Docket No. E-100, Sub 158. In addition, Duke states that the IA supports application of a fixed SISC as a separate fixed charge to mitigate complexity in the evaluation process if the SISC were to adjust under a variable methodology.

Duke next addresses NCCEBA and NCSEA's argument for the SISC to be incorporated as a reduction to the avoided energy rate that is the basis for the applicable cost-effectiveness limit. Duke reiterates its opposition to this approach and details its support for the fixed SISC applied as a separate charge for two reasons.

First, Duke argues that its recommended approach significantly reduces the complexity of the initial bid evaluation. In support of this argument, Duke relies on the IA's comments detailing the following complexities involved in incorporating the SISC into the avoided cost rates, including, the need for a second, higher avoided cost limit for Tranche 2 that would be applicable to solar generators only, and the requirement for the IA to exercise an "immense amount of subjective, technical judgments" regarding the technical capabilities of a generator to reduce volatility. In addition, Duke notes the IA's comments that this method would effectively limit market participants to use of technology that is available at the time the proposal is submitted, preventing the leveraging of future technology. Duke also notes comments from the IA and the Public Staff addressing the difficulty in comparing bids for controlled versus uncontrolled generators when the SISC is applied as a part of the avoided energy rates and the complexity of contractual provisions and penalties for those facilities that fail to mitigate volatility as promised.

Second, Duke argues that applying the SISC as a separate charge allows the market participants to apply business judgment today to determine whether to fully recognize the SISC in making their bid into Tranche 2 and provides CPRE solar generator owners the ongoing optionality to reduce intra-hour volatility and, thereby, reduce or avoid the SISC in accordance with the terms of the CPRE SISC Avoidance Protocols. In support of this argument, Duke references its initial comments and those of the Public Staff in

agreement that because Duke's CPRE SISC Avoidance Protocols enable a solar generator owner to avoid the SISC based on the facility's actual, "as measured" reduction in volatility, application of the SISC to all CPRE resources as a potentially-avoidable charge allows the generator's overall compensation to align with the actual performance of the solar generator. Duke also responded to First Solar's argument that a separate SISC charge would result in higher bids stating that avoidance of the SISC charge would allow a market participant to submit a lower bid. Duke reiterates that the simplicity of allowing winning CPRE market participants to avoid the SISC charge based on actual, real-world results is a significant attribute of its proposed method.

Next, Duke responds to First Solar's and NCCEBA and NCSEA's comments that CPRE Program facilities should be "controlled" generators by virtue of the dispatch and control rights afforded to the utility under the CPRE Program, and, thereby, eligible to avoid the SISC. Duke argues that, contrary to these assertions, the curtailment and dispatch rights permitted under House Bill 589 and included in the CPRE PPA are neither designed nor sufficient to reduce the inherent intra-hour volatility of solar resources--whether owned by a third-party or by Duke. Duke agrees with the Public Staff that the 5% and 10% curtailment rights are designed to allow the utilities to economically dispatch the facilities, but not to address the additional ancillary services costs resulting from volatility of intermittent resources. Citing the testimony filed in Docket No. E-100, Sub 158, Duke concludes that operational impacts being addressed through the CPRE economic dispatch provisions are distinct from the increased ancillary services costs to manage the increased intra-hour volatility under the SISC, and NCCEBA and NCSEA's efforts to equate the two should be rejected. Duke further argues NCCEBA and NCSEA's argument that CPRE solar generators are "wholly different" from PURPA solar generators due to the economic dispatch rights provided under the CPRE Program is also inaccurate and should be rejected. Again, Duke argues that these dispatch rights do not address intra-hour volatility. Absent a solar generator operating its facility to smooth its output in a manner that mitigates or eliminates the increased integration costs on the system, Duke concludes, all solar generators bidding into CPRE Tranche 2 should be subject to the SISC.

In the remainder of its reply comments, Duke responds to other arguments raised by First Solar and by NCCEBA and NCSEA. Duke argues that there is no basis to modify the approach to modeling integration costs to reflect CPRE-focused inputs, as recommended by NCCEBA and NCSEA, instead suggesting the use of the Astrape model used in the 2018 biennial avoided cost proceeding. Duke also states that it is in agreement with First Solar and NCCEBA and NCSEA on the broad goal of allowing solar generators be allowed to solve their own intermittency and volatility impacts to avoid the SISC. Duke cites to its proposed CPRE SISC Avoidance Protocols as the appropriate method for doing so as an "objective, measurable framework." Duke also responds to procedural objections that NCCEBA and NCSEA raised stating that all market participants had opportunity to discuss and review the SISC proposal at the stakeholder meetings and Duke modified the SISC Avoidance Protocols based on the limited comments received during the comment period led by the IA. Finally, Duke argues that the Commission need not revisit certain issues that First Solar and NCCEBA and NCSEA raised in the nature

of “generalized policy positions” or “significant changes to CPRE Tranche 2” that are outside the topic of the Commission’s Order requesting comments on the application of the SISC.

In conclusion, Duke requests that the Commission adopt Duke’s and the Public Staff’s recommended approach of implementing a fixed SISC for CPRE Tranche 2 of \$2.39/MWh in DEP and \$1.10/MWh in DEC; maintaining the SISC as a separate charge to be considered by CPRE Market Participants in developing their bids versus reducing the CPRE Tranche 2 Avoided Cost Cap; and accepting Duke’s proposed CPRE SISC Avoidance Protocols as a reasonable and appropriate mechanism to implement the “controlled solar generator” option within CPRE Tranche 2 consistent with the Commission’s SNOD.

NCCEBA and NCSEA’s Reply Comments

Through their reply comments, NCCEBA and NCSEA first object to the inclusion of the SISC in the Tranche 2 CPRE RFP Solicitation because Duke only recently raised this issue. They argue that raising the issue for the first time now, on the eve of the opening of Tranche 2 of CPRE, would be poor public policy and unfair to market participants, especially given their position that the SISC Avoidance Protocols have not been adequately vetted or reviewed by intervenors in the CPRE dockets or by market participants who may be required to comply with the proposed mitigation protocol. Specifically, they argue that the proposed mitigation protocol may limit the use of technologies that may benefit ratepayers and the grid by, for example, limiting the mitigation to “smoothing” of the generator’s output, without also allowing for “peak shaving.” They also object to the protocol based on their view that Duke has failed to address how its curtailment and dispatch rights with respect to CPRE projects may reduce integration costs. In sum, they argue that the protocol should be the subject of a stakeholder process for further review, comment, and adjustment, and that there is no compelling reason to act precipitously to address the SISC in the Tranche 2 process.

Should the Commission determine that the SISC should be included in the Tranche 2 RFP, NCCEBA and NCSEA argue for two alternative approaches. First, they propose an “uncontrolled project” pathway that would evaluate bids using the 20-year avoided cost rate less a decrement to the avoided cost rate equal to the SISC approved in the Commission’s SNOD, subject to reductions in the SISC to account for CPRE curtailment rights (5% in DEC and 10% in DEP). Second, they propose a “controlled projects” pathway that would evaluate bids using the 20-year avoided cost rate, exclusive of a decrement to the avoided cost rate. These controlled projects would be required to contractually agree to mitigate intermittency in accordance with a Commission-approved protocol, mirroring the parameters set forth in decision paragraph no. 10 in the Commission’s SNOD. This, they argue, has the benefit of requiring no additional effort on Duke’s part and no additional complexity in the IA’s evaluation role because Duke would be required to develop this protocol for Commission-approval in Docket No. E-100, Sub 158. NCSEA and NCCEBA then detail their adjustment proposal, proposed

contractual damage for those facilities that fail to comply with the mitigation protocol, and its method for evaluating bids under its proposed approaches.

First Solar's Reply Comments

Through its reply comments, First Solar argues that Duke should be required to distinguish the CPRE control and operational flexibility from the traditional uncontrolled, must-take sales of legacy QFs. In support of its argument, First Solar states that CPRE projects are required to be controllable and must be designed and built such that they can be operated to manage intermittency. Further, First Solar argues that Duke's evidence and arguments regarding legacy QFs does not and cannot validate the imposition of the SISC on facilities participating in the separate CPRE Program which, by definition, must allow the utility to "dispatch, operate, and control" them. Ultimately, First Solar argues, failure to take advantage of controllable solar will unnecessarily increase ratepayer costs through the imposition of an unnecessary and unfair charge on CPRE solar resources which, by statute, must be designed to allow the utility to "dispatch, operate, and control the solicited renewable energy facilities in the same manner as the utility's own generating resources."

First Solar next argues that Duke's suggestion that CPRE facilities are "uncontrollable" ignores the value that these facilities would otherwise provide to the benefit of ratepayers. In support of this argument, First Solar states that by requiring CPRE Program facilities to solve only for energy production variability, Duke is disregarding the full capabilities statutorily required to be incorporated in the design of CPRE Program facilities. Citing its earlier comments in this proceeding, First Solar argues that inverter-based resources like utility-scale solar can provide a wealth of essential grid services, including ancillary services, but instead of utilizing the capability of such facilities to be dispatched and controlled by the utility, Duke proposes to simultaneously charge CPRE Program facilities the SISC and then run its thermal plants at suboptimal levels. Further, they argue that in seeking to impose the SISC on CPRE Program facilities, Duke has chosen to ignore the value of the ancillary service benefits which those facilities are required to deliver and asks the Commission to look only at ancillary services costs that are based on overly limited operational assumptions.

In conclusion, First Solar argues that the General Assembly contemplated that CPRE Program projects were to be more flexibly operated, dispatched and integrated into Duke's system than must-take renewable resources. Further, First Solar argues that the SISC approach proposed by Duke is inconsistent with N.C.G.S. § 62-110.8(b) because it uses more expensive existing resources to mitigate intermittency and fails to take advantage of the capabilities of facilities participating in the CPRE Program. First Solar states that it continues to believe that transitioning to a capacity payment or tolling agreement PPA structure would effectively solve for a number of operational challenges, including those Duke seeks to address by imposing the SISC. First Solar urges the Commission to implement a capacity payment PPA structure for Tranche 3, as it would be in the best interest of ratepayers, utilities and developers. However, until such a PPA structure is developed for the CPRE Program, First Solar encourages the

Commission to incorporate incremental changes to the current Tranche 2 solicitation. Specifically, First Solar suggests that Tranche 2 CPRE Program facilities can solve for intermittency challenges more cost-effectively and efficiently than Duke's proposed SISC by using the operational capabilities that such facilities must provide, as would be consistent with the legislative intent that CPRE Program facilities be operated flexibly. This would, in First Solar's view, make productive use of the inherent value and capabilities of controllable and dispatchable CPRE Program facilities to the benefit of ratepayers through lower costs and more closely align with direction from the General Assembly than the proposed SISC.

The Public Staff's Reply Comments

Through its reply comments, the Public Staff responds to SNOD by stating that its initial proposal for the fixed SISC assessed as a separate charge to all solar generators—not as a decrement to the avoided cost cap—was designed to support the timely and cost-effective implementation of the CPRE Program, while also balancing the value of providing better cost certainty to potential market participants with the need to provide incentives to solar generators to reduce their volatility, and is overall consistent with the Commission's decisions in the SNOD. However, in light of the Commission's determination in the SNOD that the SISC should be incorporated into the avoided energy rate, the Public Staff notes conflict with its recommendation of applying the SISC in CPRE as a separate charge. This decision, the Public Staff states, is understood to apply only in the context of projects selling under the PURPA standard offer and negotiated contracts. Therefore, it remains the Public Staff's position that the most efficient method of including the SISC in the CPRE cost-effectiveness evaluation is to fix the charge for the duration of the contract term, and to require all solar bidders to pay the SISC unless they can demonstrate that they have materially reduced their site's volatility. The Public Staff states that this would result in bid prices that would be inflated to include the SISC (or the bidders' assumptions about their ability to mitigate the charge), thus ensuring that the SISC is considered in the statutorily mandated cost-effectiveness requirement for CPRE projects. The Public Staff emphasizes that a central feature of this proposed solution is that there is no up-front determination, by Duke or the IA, of whether a solar facility can or will operate as a controlled or uncontrolled solar generator for the entirety of its contract.

However, the Public Staff then offers an alternative proposal that incorporates the SISC into the avoided energy rate. In summary, the Public Staff argues that either of its proposals should achieve the ultimate result of the total cost for a controlled versus an uncontrolled generator is the same to ratepayers, and the SISC ultimately being paid by ratepayers. The key to both proposals is that the incentive, and risk, to mitigate the SISC lie with the party most capable of actually reducing the facility's volatility.

The Public Staff also responded to the comments filed by the other parties, including its view that the case law cited by NCSEA and NCCEBA is distinguishable from the CPRE Program. In conclusion, the Public Staff requests that the

Commission take its comments and recommendations into consideration in resolving the issues in this proceeding.

DISCUSSION AND CONCLUSIONS

On October 15, 2019, Duke provided notice to Commission of the opening of the CPRE Program Tranche 2 RFP. Attached to the notice filed by Duke was the Tranche 2 *pro forma* PPA for Commission approval. As Duke states, the Tranche 2 *pro forma* PPA reflects only minor changes to the *pro forma* PPA that was used in Tranche 1 and has been executed by winning bidders, with the exception of the energy storage protocols included as Appendix 10 to the *pro forma* PPA. The energy storage protocols, Duke states, were modified extensively in response to market participant feedback, and Duke's filing reflects the more relaxed 10% ramp rate provision that was discussed at the August 7 stakeholder meeting (Tranche 1 applied a 1% ramp rate and Duke's proposed standard offer contract filed in the 2018 avoided cost proceeding includes a 5% ramp rate limitation). Additionally, a "relatively small" number of changes were made to the *pro forma* PPA to reflect the limited number of recommendations received from the market participants, changes that Duke and the IA determined were "reasonable and appropriate." The Commission notes that no party has filed a specific objection to the energy storage protocols. Thus, after consideration of the foregoing and the entire record in this proceeding, the Commission determines that the Tranche 2 *pro forma* PPA should be approved.

The Commission requested and received comments addressing the applicability of the SISC to the CPRE Program, and, specifically, whether the SISC should be incorporated into the cost-effectiveness limit established by N.C.G.S. § 62-110.8(b)(2). The comments reveal a fundamental disagreement as to whether the SISC should apply to the CPRE Program, with Duke and the Public Staff taking the view that it must be applied, and NCSEA, NCCEBA, and First Solar taking the view that it cannot or should not be applied to the CPRE Program. Further, the parties disagree on how the SISC should apply. In resolving this dispute, the Commission looks to the plain language of N.C.G.S. § 62-110.8 and the legislative intent supporting its enactment, and relies on the discretion delegated to it through that statute. In employing the Commission's discretion to resolve these issues, the Commission continues to apply a broad standard of

commercial reasonableness and, ultimately, will look to the response of the market place to determine whether future adjustments in the CPRE Program are justified.^{2 3}

The Commission is persuaded that the integration of uncontrolled solar generators is imposing now quantified integration costs on the DEC and DEP systems and that these costs should be recognized in assessing the cost effectiveness of solar resources bidding into the CPRE Program. Therefore, the Commission agrees with the Public Staff and Duke that the SISC should be applied to Tranche 2 of the CPRE Program. The Commission is not persuaded by the arguments of NCSEA and NCCEBA that the Ninth Circuit's decision in *Californians* dictates a different result, for the reasons articulated by the Public Staff in its reply comments.

While the Commission notes the view of NCSEA, NCCEBA, and First Solar that all CPRE facilities should be exempted from the SISC by virtue of the dispatch and control rights afforded to the utility within the CPRE Program, the Commission nevertheless concludes that these dispatch and control rights do not mitigate or eliminate the intermittency that the Commission has determined is contributing to Duke's increased intra-hour ancillary services costs. In short, as explained by Duke and the Public Staff, the dispatch and control rights included in the PPA solve for a different problem facing system operators than the electric system's need for intra-hour ancillary services that is being impacted by the integration of variable generation, which is reflected in the SISC.

² See Order Denying Joint Motion, Approving *Pro forma* PPA, and Providing Other Relief, at 6 ("the results of the first RFP Solicitation would provide evidence as to whether one or more provisions of the *pro forma* PPA were rejected by market participants on such a scale as to jeopardize achievement of the total procurement obligation within that initial 45-month time period"); and at 7 ("the Commission intended to rely on the results of the Tranche 1 CPRE RFP Solicitation as evidence of whether the terms and conditions included in the *pro forma* CPRE PPA were accepted by market participants, and to obtain additional information through Duke's filing of the Program Plan as required pursuant to Commission Rule R8-71(g) and Duke's filing of the Program Compliance Reports pursuant to Commission Rule R8-71(h)"). See also Order Modifying and Approving Joint CPRE Program, at 27-29.

³ The Commission acknowledges that a post hoc review introduces risk that forgoing a more detailed investigation might reveal that certain provisions of the *pro forma* PPA present barriers to achievement of the CPRE Program procurement goals and prevent an RFP Solicitation from being "successful." The Commission, however, is cognizant that it is tasked with administering the provisions of N.C.G.S. § 62-110.8 on the 45-month timeline mandated therein. Moreover, should one or more RFP Solicitations "fail," the Commission has authority to require Duke to competitively procure capacity that was initially unawarded and to make up any deficit in achieving the full procurement target. N.C.G.S. § 62-110.8(a). Additionally, the Commission is empowered to continue the competitive procurement program beyond the 45-month timeline based on a showing of need. *Id.*

Further, consistent with its decision in the SNOD, the Commission concludes that the SISC should be incorporated into the avoided energy cost used to calculate the avoided cost cap for solar bids in Tranche 2 of the CPRE.⁴ Additionally, the Commission determines that the SISC should be fixed for the duration of the CPRE Tranche 2 PPA term at the following levels: \$2.39/MWh in DEP and \$1.10/MWh in DEC. These levels were determined by the Commission to be appropriate when applied to QFs that establish a legally enforceable obligation during the availability of the rates established in Docket No. E-100, Sub 158, and thus are appropriate for Tranche 2 PPAs.⁵ The Commission acknowledges, as the Public Staff has commented, that a fixed charge will lack some precision in the later years of the PPA when there are increasing levels of solar penetration. However, the Commission agrees with the Public Staff's ultimate conclusion that efficient administration of the CPRE Program justifies this lost precision and that these fixed amounts reflect the portion of the increased intra-hour ancillary services costs that is known and measureable at this time, as well as providing a clear price signal to bidders.

Further, the same avoided cost cap, which includes the SISC, will be applied to all solar bids—whether proposing to be a controlled or uncontrolled generator. Thus, every solar bid will be evaluated by the IA as an uncontrolled bid. The Commission concludes that in addition to avoiding an up-front determination by the IA of whether a solar facility can or will operate as a controlled or uncontrolled generator for the entirety of its PPA term, this approach appropriately places the risk of any failure by a “controlled” solar generator to reduce volatility at any point during its PPA term (i.e., the risk of non-performance) on the generator and not on the ratepayer. In addition, the SISC shall be applied to all utility-owned facilities in the same manner as non-utility-owned facilities.

Duke's SISC Avoidance Protocols require a solar generator to measure and verify monthly the extent to which it reduced its volatility. Although NCSEA and NCCEBA expressed the concern that there had been insufficient time to evaluate Duke's SISC Avoidance Protocols, the Public Staff expressed no objection to the protocols. Therefore, the Commission concludes that the SISC Avoidance Protocols are appropriate and is approved at this time. Additionally, the Commission determines that it is appropriate for those generators that elect to become controlled to receive a credit each month in the amount of the SISC avoided. Table 1 below illustrates the approach approved by the Commission.

⁴ The avoided cost cap reduced by the SISC is applicable only to bids involving solar generators; all other bids would be evaluated against an avoided cost cap not reduced by the SISC.

⁵ See SNOD at 2.

Table 1: Hypothetical Pricing Illustration (DEC \$/MWh)

| | | |
|--|---|----------|
| Solar Integration Services Charge (SISC) | \$ 1.10 | |
| 20-Year Avoided Cost | \$ 35.00 | |
| Avoided Cost Cap | \$ 33.90 | |
| | | |
| Uncontrolled Solar (Note 1) | Bid | \$ 33.00 |
| | Monthly Payment | \$ 33.00 |
| | Savings to Ratepayers | \$ 0.90 |
| | | |
| Controlled Solar (Note 1) | Bid | \$ 31.90 |
| | Monthly Payment (Bid plus SISC credit) | \$ 33.00 |
| | Savings to Ratepayers | \$ 0.90 |

Note 1: The IA is indifferent as to whether or not the market participant intends to develop and/or operate the proposed project in a manner that affords it the opportunity to glean value from reducing its variability within the construct of the SISC Avoidance Protocol.

The approach of evaluating each bid as an uncontrolled generator, requiring generators to measure and verify their reduced volatility, and crediting the generator for the volatility reduced eliminates the need for the IA to make highly technical judgments as to whether a generator who declared its intention to mitigate the SISC is able to do so and eliminates the need to address generator failure to perform through complicated contractual terms and conditions. Should the response of the market to CPRE Tranche 2 indicate that the Commission's decisions related to the SISC Avoidance Protocols present a barrier to entry for certain technologies or otherwise deter energy storage innovation, the Commission will exercise its discretion to determine whether adjustments to the SISC Avoidance Protocols are justified.

Based upon the foregoing and the entire record herein, the Commission determines that Duke's proposed *pro forma* PPA should be approved for use in the Tranche 2 CPRE RFP Solicitation on the timeline established in the Commission's Order further extending the Tranche 2 proposal submission deadline. Specifically, for the reasons detailed herein, the Commission determines that the SISC, applied as a fixed charge for the full term of the CPRE PPA in the amount of \$2.39/MWh in DEP and \$1.10/MWh in DEC, and the SISC Avoidance Protocols, as a method for mitigating or eliminating the SISC, are appropriate and should be approved. With the approval of the *pro forma* PPA, the Commission further concludes that Duke should be directed to proceed with the Tranche 2 CPRE RFP Solicitation. Although the Commission has declined to adopt certain recommendations from the parties herein, the Commission remains open to further refinements to the CPRE Program leading up to future RFP

Solicitations. Ultimately, the answer to whether the CPRE Program is proceeding toward a successful result lies in the response from market participants. For reasons discussed herein, the Commission concludes that this approach is consistent with the N.C.G.S. § 62-110.8 and the Commission's prior orders issued in this proceeding.

IT IS, THEREFORE, SO ORDERED.

ISSUED BY ORDER OF THE COMMISSION.

This the 24th day of January, 2020.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink that reads "Kimberley A. Campbell". The signature is written in a cursive, flowing style.

Kimberley Campbell, Chief Clerk

Commissioners Kimberly Duffley, Jeffrey A. Hughes, and Floyd B. McKissick, Jr., did not participate in this decision.