BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-100, SUB 136

In the Matter of: Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities – 2012	)	**POST-HEARING BRIEF OF SOUTHERN ALLIANCE FOR CLEAN ENERGY**

PURSUANT TO North Carolina Utilities Commission Rule R1-25, the Presiding Commissioner's ruling made at the close of hearing on October 30, 2013, the Commission's November 15, 2013 Notice of Due Date for Briefs and/or Proposed Orders, and the Commission's December 12, 2013 Order Granting Extension of Time, intervenor Southern Alliance for Clean Energy ("SACE"), through counsel, files this brief on certain issues in the current biennial proceeding, which concerns the 2012 avoided cost rates filed by Duke Energy Carolinas, LLC ("DEC"), Duke Energy Progress, Inc. ("DEP"), and Dominion North Carolina Power ("DNCP") (collectively, "the Companies").

I. SUMMARY

Traditional avoided cost methodologies do not allow renewable QFs to be compensated at the full avoided cost rate to which they are entitled under PURPA. To remedy this problem and ensure that avoided cost rates are both just and reasonable for customers and in the public interest, as well as nondiscriminatory to QFs, the Commission should take two steps: First, the Commission should establish a Performance Adjustment Factor ("PAF") of 2.0 for solar and wind QFs as an interim measure.

Second, the Commission should require the Companies to adopt a solar-specific avoided cost rate to be filed in the next biennial avoided cost docket.

II. LEGAL FRAMEWORK FOR DETERMING AVOIDED COSTS

A. The Commission Has Broad Authority to Set Avoided Cost Rates Under PURPA Section 210 and Its Implementing Regulations.

This Commission has elected to implement Section 210 of the Public Utility Regulatory Policies Act of 1978 ("PURPA") and the Federal Energy Regulatory Commission ("FERC") regulations implementing PURPA by holding biennial proceedings. Under PURPA, FERC has delegated to state commissions the responsibility to set rates for purchases from qualifying cogenerators and small power producers by electric utilities under their ratemaking authority. State ex rel. Utilities Comm'n v. North Carolina Power, 338 N.C. 412, 417, 450 S.E.2d 896, 899 (1994) (citing 16 U.S.C. § 824a-3(f)). See also Small Power Production and Cogeneration Facilities; Regulations Implementing Section 210 of PURPA (Order No. 69), 45 Fed. Reg. 12214, 12215 (Feb. 25, 1980). In doing so, FERC stated that it "believe[d] that providing an opportunity for experimentation by the States is more conducive to the development of these difficult rate principles." Id. at 12231.

PURPA requires that rates for the purchase of energy from qualifying facilities ("QFs") by electric utilities 1) shall be just and reasonable to the consumers of the electric utility and in the public interest, and 2) shall not discriminate against qualifying cogenerators or qualifying small power producers. 16 U.S.C. § 824a-3(b); 18 C.F.R. § 292.304(a)(1). Congress' goal in passing PURPA was to support the development of diverse and decentralized energy sources to reduce reliance on traditional fossil fuels. See American Paper Inst. v. Am. Elec. Power Serv. Corp., 461 U.S. 402, 405 (1983)

(noting Congress believed PURPA's mandate would reduce reliance on fossil fuels). PURPA requires large utilities to purchase available energy and capacity from QFs at the utility's avoided cost of producing the next incremental unit of electricity. 16 U.S.C. § 824a-3; see generally 16 U.S.C. § 2601 et seq. The statute defines "incremental cost" as "the cost to the electric utility of the electric energy which, but for the purchase from such cogenerator or small power producer, such utility would generate or purchase from another source." 16 U.S.C. § 824a-3(d). Similarly, FERC's PURPA implementing regulations reiterate that electric utilities are not required under PURPA to pay more for purchases than their avoided cost, 18 C.F.R. § 292.304(a)(2), defined as "the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source." 18 C.F.R. § 292.101(b)(6).

The PURPA regulations require electric utilities to establish standard rates for purchases from QFs with capacity of 100 kW or less, and also gives state commissions the authority to develop standard rates for larger QFs. 18 C.F.R. § 292.304(c)(1), (2). These standard rates "[m]ay differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies." Id. at (c)(3)(ii).

Further, the PURPA regulations lay out several factors that "shall, to the extent practicable, be taken into account" when state commissions are determining avoided costs. Id. at (e). These include:

- Energy and capacity cost data provided pursuant to FERC regulations, including state review of any such data;
- Availability of capacity or energy from QFs during system daily and seasonal peak periods;

- Dispatchability and reliability;
- Duration and terms of contract;
- Usefulness of energy and capacity during system emergencies;
- Individual and aggregate value of energy and capacity;
- Smaller capacity increments and shorter lead times for additional capacity from QFs;
- Relationship of availability of energy and capacity from the QF to the ability of the utility to avoid costs, including deferral of capacity additions and reduction in fossil fuel use; and
- Costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a QF.

18 C.F.R. § 292.304(e)(1)-(4).

Finally, state commissions may account for the environmental costs "of all fuel sources" in determining avoided cost rates, as long as they are "real costs that would be incurred by utilities." 71 FERC 61,269, 62,080 (June 2, 1995), citing 70 FERC 61,290, 61,676, reconsideration denied, 71 FERC 61,232 (1995).

B. State Law Regarding Avoided Cost Rates for Small Power Producers.

In addition to meeting the requirements of PURPA, this Commission also holds these biennial proceedings to determine utilities' avoided costs pursuant to North Carolina law. N.C. Gen. Stat. § 62-156(B) delegates to the Commission the responsibility to establish rates for small power producers, defined in N.C. Gen. Stat. 62-3(27a) as a person or corporation owning or operating an electrical power production facility with a power production capacity which, together with any other facilities located at the same site, does not exceed 80 megawatts of electricity and which depends upon hydroelectric power for its primary source of energy.

C. The Commission's Historic Acceptance of the Peaker Methodology.

PURPA leaves the specific methodology to be used in determining avoided cost to the states' discretion. See California Public Utilities Commission, Order Denying

Rehearing, 134 FERC 61,044, 61,160 (2011) (granting state commissions the authority to decide what particular capacity is being avoided in setting avoided cost rates). In North Carolina, where the state legislature has not mandated the use of a particular avoided cost methodology, the appropriate methodology is left to this Commission, which has allowed the electric utilities to choose their own method of setting avoided costs, subject to the Commission's review.

In the past, the Commission has accepted the peaker methodology as the method by which DEC and DEP calculate their avoided cost rates (and previously, the Differential Revenue Requirement methodology as the method by which DNCP calculates its avoided cost rate). See Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket No. E-100, Sub 127 (July 27, 2011) ("E-100, Sub 127 Order") at 11; Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket No. E-100, Sub 117 ("E-100, Sub 117 Order") at 10 (citing Docket Nos. E-100, Sub 53; E-100, Sub 74; and E-100 Sub 106). The peaker method is designed to determine a utility's marginal capacity and marginal energy cost through generation production modeling. Tr. Vol. I, p. 182. This approach estimates avoided capacity costs by using the capital costs of the lowest-cost capacity option available to the utility. It typically assumes that the utility will avoid the installed cost of a simple-cycle combustion turbine, also known as a peaker unit. Id. Avoided energy costs are estimated using a cost simulation model to determine the marginal energy costs of running the utility's generation system with and without a block of QF power. Tr. Vol. III, pp. 42-43. The peaker method essentially sets avoided costs for all types of QFs based on the

marginal capacity cost of the utility's least-cost capacity option, which typically results in high marginal energy costs.

III. ARGUMENT

A. The Utilities' Avoided Cost Rates Do Not Represent the Full Avoided Cost for Solar QFs.

There is substantial evidence in this docket that solar has attributes that allow utilities to avoid costs that are either ignored or under-accounted for when a utility uses the peaker method. See, e.g., Tr. Vol. II, p. 198 (NCSEA witness stating that the body of solar valuation analysis demonstrates that solar is generally worth more than retail). The following evidence demonstrates that solar QFs are receiving less than full avoided cost under the peaker methodology:

- *Solar provides peak power.* Solar energy production from QFs overlaps with the utilities' peak energy needs. Tr. Vol. III, pp. 30-31 (testimony of Public Staff witness Kennie D. Ellis). Furthermore, solar generation peaks during the early afternoon, making it a more valuable resource than a constant, "flat" profile in all daylight hours. See Exhibit KRR-7 at 4. In an analysis of how this would impact DNCP's avoided energy costs, it was concluded that such a solar-weighted avoided energy price would be 14% higher than the annual average avoided cost energy price for a baseload profile. Id. at 8. However, DEC/DEP do not evaluate how the daily and hourly profile of solar energy output correlates with the utilities' peak and super peak energy needs to determine what costs solar energy from QFs allows them to actual avoid. Tr. Vol. I, pp. 149, 245-47; Vol. III, p. 204. See 18 C.F.R. 292.304(e)(2) (FERC regulation allowing consideration of availability of capacity or energy from QFs during system daily and seasonal peak periods).

- *Solar helps avoid transmission capacity costs*. Energy from wholesale solar QFs that are interconnected at the distribution level (typically at or below 5 MW in size) can allow utilities to avoid expensive transmission upgrade costs. Ex. KRR-7 at 5. However, DEC/DEP do not evaluate whether solar QFs allow the utilities to avoid more costs in this area than if the energy was generated from another source. Tr. Vol. III, p. 207; see also SACE Snider Cross Ex. 1.

- *The peaker method ignores certain line loss costs avoided by solar*. Solar projects operate over daylight hours during which system loads (and system line losses) are above-average. Ex. KRR-7 at 14. Additionally, many solar QFs are located on the distribution system, resulting in transmission line loss benefits as well as potential distribution line loss benefits. However, the Companies do not consider distribution line loss benefits at all, see Tr. Vol. I, p. 149, 245-47, which can be in the 5-8% range. Ex. KRR-7 at 14. And their current transmission line loss savings do not assess the correlation between solar incidence or generation and avoided costs. Tr. Vol. III, p. 207; see also SACE Snider Cross Ex. 1. As a result, the utilities' current line loss adjustments are likely too low when it comes to solar. Ex. KRR-7 at 14. See 18 C.F.R. 292.304(e)(4) (FERC regulation permitting consideration of costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a QF).

- *Solar decreases risks to ratepayers of rising fossil fuel costs.* Solar facilities are not subject to costs associated with changes in fossil fuel prices. Tr. Vol. III, p. 21-22. See also Tr. Vol. II, p. 171 (referring to DEP's natural gas hedging costs of $39 m., $51 m., and $70 m., which were passed through to customers in 2010, 2011 and 2012, respectively but not included in the utility's avoided cost calculation).

- *Solar QFs should be evaluated over their useful life.* Solar facilities have useful lives of 20 to 30 years, but QF contracts are set at a standard 15 year contract term. In contrast, when a utility puts a solar facility in its rate base, it determines the costs to build and operate that plant over its useful life. Ex. KRR-7 at 2. Solar QFs should be evaluated over the same long term time frame. See 18 C.F.R. 292.304(e)(2)(iii) (FERC regulation allowing consideration of duration and terms of QF contracts in establishing avoided cost).

- *Solar capacity is modular and quick to deploy*. Solar generation can be installed at a wide range of scales and a diversity of locations, with shorter lead times and without the "lumpiness" typically associated with the addition of large capacity to a utility's system. Ex. KRR-7 at 2; Tr. Vol. III, p. 85-86 (Public Staff discussing benefit to ratepayers of shorter lead times of solar QFs). Avoided cost rates should consider the savings to ratepayers of avoiding these costs. See 18 C.F.R. 292.304(e)(2)(vii) (FERC regulation permitting consideration of smaller capacity increments and shorter lead times for additional capacity from QFs in setting avoided cost rates).

B. The Commission Should Establish a PAF of 2.0 for Solar and Wind QFs.

1. The Commission's Historic Use of PAFs in Avoided Cost Proceedings.

The Commission's charge in this docket is to ensure that the avoided cost rates set by the regulated utilities are just, reasonable and nondiscriminatory. 16 U.S.C. § 824a-3(b); 18 C.F.R. § 292.304(a)(1). As stated earlier, DEC, DEP and DNCP base their avoided cost rates on the peaker method, which determines capacity costs based on the installed cost of a natural gas peaking unit. In other words, the peaker method bases a utility's avoided cost on the installation costs of a CT unit and marginal energy costs of its entire generation system. The peaker method is not well suited to assessing the value of variable QF technologies such as solar and wind, whose operation is dependent on the availability of the sun and the wind. See, e.g., Tr. Vol. II at 199 (NCSEA witness Karl Rabago testifying regarding the "contortions that everyone has to go through to try to address a fuel-free resource like solar in a fuel-based methodology like the peaker methodology.") Qualities specific to solar and wind resources make it inherently more complicated for a utility to determine their value in the context of the traditional peaker methodology.

Moreover, fuel-free resources like solar and wind provide significant benefits to ratepayers. For example, solar QFs provide energy and capacity during peak times when utilities' costs of providing energy are highest. See 18 C.F.R. § 292.304(e)(2) (the value of energy and capacity often hinges on when it is delivered to the grid); Regulations Implementing Section 210 of the Public Utility Regulatory Policies Act of 1978, Order No. 69, FERC Stats. & Regs. 30,128 (1980), order on reh'g, Order No. 69-A, FERC Stats. & Regs. 30,160 (1980) (stating that technologies like solar photovoltaic "have the

general advantage of providing their maximum power coincident with the system peak when used on a summer peaking system"). See also Tr. Vol. III, p. 30, Testimony of Public Staff witness Kennie D. Ellis ("Since DEC, DEP and Dominion are all summer peaking systems, it is appropriate to consider the value of the power provide by generating systems that operate during these times of higher customer demand.")

Despite the challenge of using the peaker method to set an avoided cost rate that fairly captures the benefits of solar and wind, it is important to ensure nondiscriminatory treatment of these QFs. In the past, the Commission has tried to remedy this inequity by requiring that electric utilities adopt a PAF for QFs. As explained by the Commission:

> [Because] standardized capacity rates for purchases from QFs in North Carolina are calculated on a per-kWh basis. . . . if rates were set at a level equal to a utility's avoided capacity costs without a PAF, a QF would not receive the full capacity payment to which it is entitled unless it operated 100% of the on-peak hours throughout the year.

E-100, Sub 127 Order at 11-12. Without the PAF, the practice of linking capacity value payments to energy payments would create inherent discrimination against QFs with little or no control over when their facilities generate electricity. To make up for this inequity, a PAF is used in calculating the capacity credit component of avoided cost rates in recognition of the fact that some generating facilities will be undercompensated due to their inability to operate at all times. See Tr. Vol. I, pp. 110, 113 (DEC and DEP conceding that a PAF is warranted to keep solar QFs from being unfairly penalized by peaker method). In other words, "[t]he PAF is used to increase the capacity rates and, thus, allow a QF to experience a reasonable number of outages and still receive payments equal to the utility's avoided capacity costs." E-100, Sub 127 Order at 11-12. The Commission has stated that "[t]he calculation of a performance adjustment factor is a

critical part of developing avoided cost rates under the peaker methodology." E-100, Sub 79 Order at 17.

Until the 1996 avoided cost proceeding in Docket No. E-100, Sub 79, the Commission approved a PAF of 1.2 for all QFs. E-100, Sub 127 Order at 11. The 1.2 PAF reflected the Commission's judgment that, "if a unit is available 83% of the time, it is operating in a reasonable manner and should be allowed to recover the utility's full avoided costs." Id. In its Order approving avoided cost rates in Docket No. E-100, Sub 79, the Commission approved a PAF of 2.0 for hydro QFs with no storage capability (i.e., "run-of-river" hydro) and no other type of generation, which allows such QFs to recover their full capacity payments if they operate 50% of the on-peak hours. Id.

In setting the PAF for run-of-river hydro QFs at 2.0, the Commission took into account two key factors that distinguished such facilities from other QFs. First, the Commission expressed concern with the imbalance between treatment of hydro QFs and the utilities' treatment of hydro facilities in rate base. When a utility included a run-of-river hydro generating facility in its rate base, as opposed to purchasing that power from a QF, it was able to recover the full costs of that facility through rates regardless of how frequently it operated. In contrast, hydro QFs could only recover the full capacity costs of the facility if it operated 83% of the time. Using the PAF, the Commission sought to remedy this discrimination, by imposing a PAF of 2.0 on hydro QFs to place these facilities "on an equal footing" with hydro facilities in utilities' rate base. Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket. No. E-100, Sub 106 at p. 20 (Dec. 17, 2007) ("2006 Order"). The Commission stated that the 2.0 PAF would allow hydro QFs "to receive the full capacity payments to which they are

entitled." Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket. No. E-100, Sub 106 at p. 20 (Dec. 17, 2007).

Second, the Commission concluded that "based on the statewide policy of encouraging hydro generation as expressed in G.S. 62-156," a PAF of 2.0 should be used for hydro facilities without storage capacity. Order . . . , E-100, Sub 79 (June 19, 1997) at 17. The Commission rejected arguments that a higher PAF for certain QFs is "discriminatory" or "in excess of avoided costs decreed by PURPA," noting that run-of-river hydro QFs "are unique since their ability to generate is essentially beyond the control of their operators because their fuel is essentially stream flow which is influenced by rainfall and since G.S. 62-156 establishes a policy of encouraging hydro generation." Further, and importantly for this proceeding, the Commission made the following observation:

> [U]se of a higher [PAF] for these hydro facilities does not exceed avoided costs; it simply changes the method by which avoided costs are paid. It allows these QFs to operate less in order to receive the full capacity payments to which they are entitled, and this seems appropriate and reasonable considering the limitations on their control of their generation.

Id.

In 2006, the Public Staff recommended that solar and wind QFs also receive a PAF of 2.0 due to their similarly intermittent nature. The Commission agreed with the Public Staff that their lack of control is "a legitimate argument for treating them in the same manner as run-of-river hydro QFs"; however, the Commission pointed out that unlike hydro, the state's utilities currently had no solar or wind facilities in rate base. Proposed Order of the Public Staff, Docket No. E-100, Sub 106 at 19 (Sept. 19, 2007); 2006 Order at 20; see also Tr. Vol. I at 127-28, 134. The Commission was also persuaded by the Public Staff that the passage of the Renewable and Efficiency Portfolio

Standard ("REPS") was likely to change the market for renewable energy in North Carolina, warranting further consideration of the PAF in future cases. Id. at 20. The Commission ultimately decided to defer consideration of a 2.0 PAF for wind and solar to subsequent proceedings after the impact of the REPS was better understood. Id. at 22.

As a result, the PAF is currently set at 2.0 for hydroelectric facilities with no storage capability and no other type of generation, and at 1.2 for all QFs that do not qualify for a PAF of 2.0. See NCUC Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket No. E-100, Sub 127, at para. 7, 8 (July 27, 2011).

2. A PAF of 2.0 is Warranted for Solar and Wind QFs.

The Commission should adopt a 2.0 PAF for solar and wind as part of its Order in this docket. Solar and wind facilities are uniquely suited to offer substantial benefits to ratepayers. Moreover, there is no justification for treating run-of-river hydro QFs in a different manner than solar and wind QFs. Such treatment runs counter to PURPA's requirement that rates be nondiscriminatory.

Not all peak hours are created equal. For utilities, there are certain times during the day when utilities are faced with much higher demand, resulting in higher costs related to the provision of electricity. Solar energy overlaps with many of these "super peak" hours, but current avoided cost rates offered to solar QFs fail to account for the full costs that utilities avoid when purchasing solar during those times. See Exhibit KRR-7 at 8 ("North Carolina avoided cost prices are differentiated into on- and off-peak prices, and also can vary seasonally by peak vs. off-peak months. This differentiation captures some, but not all of the hourly variation in the energy benefits of solar," due to solar's production of significant power in the mid-afternoon hours of peak demand).

DEC and DEP appear to acknowledge the phenomenon of "super peak" costs; however, they oppose the use of a 2.0 PAF for solar. Instead, they claim that the "Option B" rates reflect avoided costs at the "super peak" times. Option B is a modified rate structure that seeks to better align on- and off-peak hours with periods of higher customer demand and higher generation costs. See Tr. Vol. III, p. 28. Option B spreads capacity credits over 1,860 on-peak hours per year, whereas Option A rates have 4,160 on-peak hours per year. Id. See also NCSEA Bowman Cross Ex. 1 at 28 (DEC testimony in 2006 Biennial Docket that Option B hours correspond to times when "the value of purchased power to the Company is the greatest"); Tr. Vol. I, p. 73 (DNCP attorney stating that the utility is "happy" to support Option B). While an improvement on utilities' proposed rates, Option B is likely insufficient to ensure solar QFs receive their full avoided costs. For example, a recent study by Crossborder Energy found that the value to the North Carolina utilities of purchasing wholesale solar energy, just in terms of energy, generation capacity, transmission capacity and line loss benefits, is well above the current avoided cost rates set by the Companies. Exhibit KRR-7 at 3. Additionally, NCSEA Witness Karl Rabago noted that the bulk of solar valuation analyses values solar at above retail rate. See Tr. Vol. II, p. 198.

The Public Staff initially supported a PAF of 2.0 for solar and wind QFs in this proceeding to address injustice created by the peaker method and ensure solar QFs obtain payment that they are entitled to under PURPA. See Tr. Vol. II, p. 89-90. While the Public Staff later took a position in favor of Option B, it conceded that both the PAF and Option B are aimed at dealing with the fundamental issue of ensuring that variable QFs

receive the full capacity value to which they are entitled under PURPA Section 210 when utilities use the peaker method. Tr. Vol. III, p. 89.

In addition, the utilities have not demonstrated that a PAF of 2.0 for solar and wind QFs would exceed their avoided costs. While DEC and DEP claim that a 2.0 PAF for wind and solar would exceed their avoided costs, they provide no evidence for that assertion. Tr. Vol. I, p. 236-39. In fact, DEC and DEP concede that they currently lack sufficient information to quantify the costs that are avoided by solar purchases from QFs. DEC and DEP are undertaking a joint cost-benefit analysis of solar, but it is yet to be completed. Id. Furthermore, DEC and DEP admit that they are "only beginning to understand the costs, benefits and challenges associated with these types of resources," referring to solar and wind. See Docket E-100 Sub 136, Duke and Progress joint reply comments, p. 39 (Mar. 28, 2013). Similarly, DNCP concedes that a PAF of 2.0 does not necessarily exceed its avoided costs. Tr. Vol. II, p. 12.

Furthermore, there is no legitimate justification for run-of-river QFs and other variable QFs to be treated differently by this Commission in setting avoided cost rates. Both are limited energy sources that lack control over their output. Tr. Vol. I, p. 148. Both provide energy and capacity benefits to utilities (and this is especially the case for solar QFs, whose output typically overlaps with peak times). Id. Both are supported by the North Carolina state legislature – hydro through G.S. 62-156, and solar and wind through the REPS.

Both hydro and solar facilities are now in the utilities' rate base, allowing utilities to recover the full capacity costs of these facilities regardless of their production output. Tr. Vol. I, p. 148; Vol. II, p. 22. While the utilities assert that this fact is irrelevant when

it comes to setting avoided cost rates, see, e.g., Tr. Vol. I, pp. 132-33, their position is without merit. FERC has stated that avoided cost rates are "intended to put the utility into the same position when purchasing QF capacity and energy as if the utility **generated the energy itself** or purchased the energy from another source." 105 FERC 61,004, 61,007 (Oct. 1, 2003) (emphasis added). As a result, the treatment of facilities in rate base is highly relevant when it comes to determining avoided cost rates.

The utilities also attempt to convince the Commission that solar is an essentially limitless resource, and that unlike the state's run-of-river hydro facilities, a higher PAF is not required for solar development to thrive. As explained by Renewable Energy Group ("REG") witness John E.P. Morrison, this is simply not true. Similar to hydro facilities, there are real and significant constraints on where a solar QF can be sited in North Carolina, due to transmission interconnection requirements, zoning limitations, and other barriers. See Tr. Vol. II, p. 123 (REG Witness Morrison stating that solar QF developers "are rather quite constrained in where we can put our QF facilities").

Lastly, now that Duke has solar facilities in its rate base as well as hydro, this Commission's continuing practice of requiring a 2.0 PAF for run-of-river hydro QFs but not for solar QFs raises real questions of fairness. In its testimony, the Public Staff does not explain how it would be appropriate for this Commission to continue to require a 2.0 PAF for hydro facilities and yet find that Option B allows sufficient compensation for similarly situated non-hydro QFs. Rather, the Public Staff alluded to the potential discriminatory effect of such a course of action in response to questions from the Commission as to why the Public Staff would not support a PAF of 2.0 for solar now that Duke has solar in its rate base. See Tr. Vol. III, p. 96-97 ("We're certainly aware that

there's a discriminatory issue out there, but we were advised by counsel that's certainly a legal issue and we couldn't – we couldn't say any more in that regard.")

C. Solar-specific avoided cost filings in next biennial docket.

1. The Peaker Method Is Ill-suited to an Accurate Determination of Solar and Wind Avoided Costs.

Approval of a PAF of 2.0 for solar and wind resources is a reasonable near term solution, ensuring that QFs are given even-handed treatment and that these facilities are not discriminated against compared to facilities that are in rate base. While a PAF of 2.0 represents "rough justice," it will probably still result in payments to solar QFs that are less than full avoided costs. Tr. Vol. II, p. 230. Moreover, as explained by NCSEA witness Karl Rabago, trying to fit solar avoided cost valuation into the peaker methodology requires "contortions" and simply does not make sense going forward. Tr. Vol. II, p. 199. To more accurately reflect the value of solar and afford solar QFs the full avoided cost payment to which they are entitled under PURPA, the Commission should require the utilities to adopt a solar-specific avoided cost rate to be filed in the next biennial docket.

PURPA was designed to determine what the avoided cost is. Tr. Vol. I, p. 152. As a result, correct valuation is critically important. See Tr. Vol. II, p. 181. The evidence in this docket demonstrates the shortcomings of traditional avoided cost methodology in determining avoided cost. For example, the peaker method essentially equates a CT – which has relatively low capacity costs and high energy costs – with a solar facility, which has a higher up front capacity cost but that "essentially eliminates the need to pay for a lifetime of fuel and also eliminates the emissions associated with combusting fuel and all water costs and risks." Tr. Vol. II, p. 168. As a result, this methodology causes a

resource with no fuel costs to "seem to avoid less cost than it actually does." Tr. Vol. II, p. 170. Instead, the peaker methodology affirmatively favors resources with low capacity costs. Id. at 170-171. See also Tr. Vol. III, p. 22 (Public Staff Witness Ellis discussing the benefits to ratepayers when QFs reduce costs associated with increases in fossil fuel costs).

This Commission has historically permitted the utilities to determine which valuation methods they will adopt, within reason. However, the evidence in this docket makes clear that the use of peaker methodology to determine avoided costs for variable resources is no longer reasonable because more accurate methods are available. Traditional avoided cost calculations "are inadequate to objectively capture the 'full avoided costs' associated with solar electric facilities." Tr. Vol. II, p. 156. The utilities' use of this method, while somewhat mitigated by the Commission's adoption of a PAF, has caused "unintentional but nonetheless impermissible discrimination against qualifying solar electric facilities." Id. at 157. As a result, the peaker method no longer advances PURPA's goal of requiring just, reasonable and nondiscriminatory rates for solar QFs. 16 U.S.C. § 824a-3(b); 18 C.F.R. § 292.304(a)(1).

2. A Solar-Specific AC Rate Is Warranted to Ensure Adequate Compensation to QFs.

The time is right for the reevaluation of traditional avoided cost methods, due to the extensive data that is now available on how variable resources match up with peak energy needs. As discussed above, solar QFs allow utilities to avoid costs that are either completely ignored or under-accounted for when a utility uses the peaker method. This evidence shows that there are real costs that a utility avoids when it purchases from a solar QF based on solar's inherent supply characteristics, and which can be better

quantified through a solar-specific avoided cost rate. See 18 C.F.R. 292.304(c)(3)(ii) (Avoided cost standard rates "[m]ay differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies.").

Moreover, a decision by the Commission to require the Companies to evaluate the true avoided cost of solar QFs in the next biennial docket would be consistent with evidence presented by several parties in this case that more research is warranted to determine the costs and benefits of solar. See, e.g., Tr. Vol. II, p. 93 (Public Staff stating that the actual performance of solar needs to be analyzed); Tr. Vol. III, p. 202 (Duke witness conceding that more in depth study of impacts and benefits of solar is warranted); Tr. Vol. II, p. 164 (NCSEA witness stating that "a comprehensive and unbiased analysis of the benefits and costs of solar electric generation will reveal net value that substantially exceeds the cost to the utility and its ratepayers").

Furthermore, while DEC/DEP witnesses dismissed "value of solar" analyses as "irrelevant to the present proceeding" and "not an appropriate means of establishing avoided costs," this argument appears largely semantic. DEC and DEP concede that they are conducting a cost-benefit analysis of solar. Tr. Vol. III, pp. 112, 119; Tr. Vol. I, p. 139-42; Vol. III, p. 186. DEC and DEP contend that this is not a "value of solar" analysis, but rather "a comprehensive study seeking to identify and, where possible, quantify potential benefits and costs of solar generation across the entire generation, transmission and distribution systems" and that these study results will be incorporated into resource planning and avoided cost methodology. Tr. Vol. I, p. 139-42; NCSEA Bowman Rebuttal Cross Ex. 1. Semantics aside, this analysis of solar costs and benefits

is clearly relevant to the determination of PURPA avoided costs. DEC and DEP themselves have acknowledged its relevance to these proceedings by stating that they hope to complete this study prior to the next avoided cost tariff filing "and to incorporate findings as applicable." Id.

As a result, an order by this Commission requiring the utilities to file solar-specific avoided cost rates in the next biennial proceeding would simply require them to take the final, logical step of setting a value based on the internal analyses that are already underway.

3. This Commission is well within its authority to mandate the adoption of a technology-specific avoided cost rate.

State commissions have "a wide degree of latitude" in establishing avoided cost rates, so long as those rates are consistent with FERC regulations implementing PURPA. American REF-FUEL Company of Hempstead, 47 FERC 61,161, at 61,533 (1989). FERC has expressed its "reluctan[ce] to second guess the state commission's determinations." California Public Utilities Commission ("CPUC"), Order Granting Clarification and Dismissing Rehearing, 133 FERC 61,059 at 61,266 (2010). In addition, FERC has recently issued guidance clarifying that state commissions have broad latitude in adopting more comprehensive and fair avoided cost methods.

This Commission is well within its authority to mandate the adoption of a technology-specific avoided cost rate. The regulations implementing PURPA make clear that standard rates "[m]ay differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies." 18 C.F.R. 292.304(c)(3)(ii). These rates should incorporate the quantifiable grid benefits of QFs that are located on the distribution system. See CPUC, 133 FERC at 61,268,

citing 71 FERC 61,269 at 62,080 (state commissions can base avoided cost on a determination of the expected costs of upgrades to the T&D system that a purchasing utility avoids when it purchases from certain QFs). These location-based benefits may be included in avoided cost rates so long as the QF resources permit the utility to avoid actual costs. Id. Incorporating these benefits allows a more accurate calculation of avoided costs, one that reflects the value of distributed resources to the utility.

Distributed QFs can be located closer to load centers and reduce line losses from transporting electricity over long distances. See FERC Order No. 69, 45 Fed. Reg. 12,214 at 12,227 ("If the load served by the [QF] is closer to the [QF] than it is to the utility, it is possible that there may be net savings resulting from reduced line losses. In such cases, the rates should be adjusted upwards."). Additional savings from QFs located in congested parts of the grid may also be considered. CPUC, 133 FERC at 61,267-68.

Finally, several parties in this docket expressed the opinion that it is within this Commission's power to set a solar-specific avoided cost rate. See, e.g., Tr. Vol. II, p. 95-96 (Staff stating that "if we want to take it one step further and say depending on the type of generation, then so be it."); Vol. III, p. 204-207 (DEC/DEP conceding that the Commission has authority to require a solar-specific avoided cost rate that differentiates based on the unique costs that solar QFs allow it to avoid). DEC and DEP also state that a solar specific avoided cost rate "would be considered in future filings." Tr. Vol. III, p. 206.

IV. CONCLUSION

Substantial and competent evidence in the record shows that the Companies' traditional method of determining avoided costs under PURPA does not result in fair

rates that allow QFs to be compensated at the full avoided cost rate to which they are entitled. In light of this evidence, SACE respectfully requests that the Commission take two steps: First, as an interim measure to address the inequity resulting from the application of the peaker method to solar and wind resources, the Commission should establish a Performance Adjustment Factor ("PAF") of 2.0 for solar and wind QFs. Second, as a longer-term solution, the Commission should require the electric utilities to adopt a solar-specific avoided cost rate to be filed in the next biennial avoided cost docket.

Respectfully submitted this 20th day of December, 2013.

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CERTIFICATE OF SERVICE

I certify that the persons on the service list have been served with the foregoing Post-Hearing Brief of Southern Alliance for Clean Energy either by electronic mail or by deposit in the U.S. Mail, postage prepaid.

This the 20th day of December, 2013.

s/ Robin G. Dunn
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