

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. 13AL-0958E

IN THE MATTER OF ADVICE LETTER NO. 1649 - ELECTRIC FILED BY PUBLIC SERVICE COMPANY OF COLORADO TO IMPLEMENT A NEW METHODOLOGY TO DERIVE PAYMENT RATES APPLICABLE TO QUALIFYING FACILITIES (“QFS”) WITH A DESIGN CAPACITY BETWEEN 10 AND 100KW, TO BECOME EFFECTIVE SEPTEMBER 27, 2013.

**RECOMMENDED DECISION OF
ADMINISTRATIVE LAW JUDGE
MANA L. JENNINGS-FADER
PERMANENTLY SUSPENDING EFFECTIVE DATE OF
PROPOSED TARIFF SHEETS; ADDRESSING METHOD
FOR CALCULATION OF CAPACITY RATE COMPONENT
PAYMENT AND OF ENERGY RATE COMPONENT
PAYMENT; ADDRESSING TERMS AND CONDITIONS
IN TARIFF; REQUIRING FILING; AND SHORTENING
TIME FOR FILING RESPONSE TO EXCEPTIONS**

Mailed Date: August 1, 2014

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I. STATEMENT

1. On August 27, 2013, Public Service Company of Colorado (Public Service, PSCo, or Company), filed Advice Letter No. 1649- Electric (Advice Letter) to implement new methods to derive payment rates for Qualifying Facilities with a design capacity between 10 and 100 kilowatts (kW) in Public Service's Electric Purchase - Small Power Production and Cogeneration Facility Policy Section of PSCo's P.U.C. No. 7 - Electric tariff. Accompanying the Advice Letter were tariff sheets that, if in effect, would implement the new methods.

2. On September 5, 2013, the Company filed the Publisher's Affidavit attesting to the notice printed in *The Denver Post* on August 29, 2013 that gave notice to the public of the pending Advice Letter filing.

3. On September 25, 2013, by Decision No. C13-1196, the Commission set this matter for hearing, thus suspending the effective date of the tariffs that accompanied the Advice Letter. In that Decision, the Commission referred this Proceeding to an Administrative Law Judge (ALJ).

4. Trial Staff of the Commission (Staff) intervened as of right. The Vote Solar Initiative (Vote Solar or VSI) and Western Colorado Power Company, LLC (WCPC), were granted leave to intervene.

5. Staff, Vote Solar, and WCPC, collectively, are the Intervenors. Public Service and Intervenors, collectively, are the Parties. Each party is represented by legal counsel.

6. The initial suspension period of the effective date of the proposed tariffs appended to the Advice Letter was set to expire on January 25, 2014. On October 30, 2013, by Decision No. R13-1367-I, the ALJ further suspended, until April 25, 2014, the effective date of the proposed tariff sheets that accompanied the Advice Letter.

7. On January 16, 2014, Public Service filed its Advice Letter No. 1649 - Electric Amended (Amended Advice Letter).¹ Appended to the Amended Advice Letter are proposed tariff sheets that have an effective date of February 15, 2014 and that are otherwise identical to the proposed tariff sheets appended to the Advice Letter.

8. On January 17, 2014, by Decision No. R14-0071-I, the ALJ suspended, until June 15, 2014, the effective date of the tariff sheets appended to the Amended Advice Letter.

9. On March 4, 2014, by Decision No. R14-0231-I, the ALJ further suspended, until September 13, 2014, the effective date of the tariff sheets that accompanied the Advice Letter.

10. On November 14, 2013, the ALJ held a prehearing conference in this matter. Following that prehearing conference, by Decision No. R13-1443-I,² the ALJ scheduled the

¹ The Amended Advice Letter and the appended proposed tariff sheets superseded in their entirety the Advice Letter, the proposed tariff sheets, and the original effective date of the proposed tariff sheets that the Company filed on August 27, 2013.

² This Interim Decision was issued in this Proceeding on November 13, 2013.

evidentiary hearing in this matter for January 30 and 31, 2014 and established the procedural schedule.

11. On December 3, 2013 and pursuant to the procedural schedule, the Company filed direct testimonies and exhibits.

12. On January 9, 2014 and pursuant to the procedural schedule, Vote Solar and WCPC each filed answer testimony and exhibits.

13. On January 14, 2014, by Decision No. R14-0046-I and on PSCo's unopposed motion, the ALJ rescheduled the evidentiary hearing in this matter for February 20 and 21, 2014; and modified the procedural schedule.

14. On January 31, 2014 and pursuant to the procedural schedule, Public Service filed its rebuttal testimony and exhibits. On that date, Staff and Vote Solar each filed cross-answer testimony and exhibits.

15. On February 18, 2014, the ALJ held a motions hearing in this matter. Following that motions hearing, by Decision No. R14-0231-I,³ the ALJ rescheduled the evidentiary hearing in this matter for April 4 and 7, 2014 and modified the procedural schedule.

16. On March 14, 2014 and pursuant to the procedural schedule, each intervenor filed supplemental answer testimony and exhibits.

17. On March 28, 2014 and pursuant to the procedural schedule, Public Service filed supplemental rebuttal testimony and exhibits.

18. On April 1, 2014, the ALJ held a status conference in this matter. Following that status conference, on April 4, 2014, by Decision No. R14-0359-I, the ALJ rescheduled the

³ This Interim Decision was issued in this Proceeding on March 4, 2014.

evidentiary hearing in this matter for April 21 through 23, 2014 and modified the procedural schedule.

19. Numerous motions were filed and were addressed by Interim Decisions.

20. The evidentiary hearing was held as scheduled on April 21 through 23, 2014. At the conclusion of the hearing, the ALJ closed the evidentiary record.

21. Each party filed a Statement of Position.

22. In accordance with § 40-6-109, C.R.S., the undersigned ALJ now transmits to the Commission the record in this Proceeding along with a written recommended decision.

II. GENERAL FINDINGS

23. General findings of fact are here. Additional findings of fact are found throughout this Decision.

A. The Parties.

24. Public Service is a public utility in the State of Colorado and is subject to the jurisdiction of, and is regulated by, the Commission. As relevant here, PSCo is engaged in the generation, purchase, transmission, distribution, and sale of electricity. PSCo is subject to the provisions of section 210 of the federal Public Utility Regulatory Policies Act (PURPA),⁴ to the rules of the Federal Energy Regulatory Commission (FERC), and of this Commission, that implement PURPA. *See Rules 4 Code of Colorado Regulations (CCR) 723-3-3900 through*

⁴ Section 210 of PURPA is codified at 16 U.S.C. § 824a-3 and, in the evidentiary record, is Hearing Exhibit No. 19. Unless the context indicates otherwise, references to PURPA in this Decision are to 16 U.S.C. § 824a-3.

723-3-3974 (PUC PURPA Rules);⁵ 18 *Code of Federal Regulations* (CFR) Subchapter K, Part 292, Subparts A, B, and C (as published on April 1, 2006) (FERC QF Rules).⁶

25. Intervenor Staff is litigation Staff of the Commission as identified in the Rule 4CCR 723-1-1007(a)⁷ notices filed in this Proceeding.

26. Intervenor Vote Solar is a non-profit Internal Revenue Code § 501(c)(3) organization, was established in 2002, has offices in Colorado (among other places), and has approximately 1,500 members in Colorado. In general, Vote Solar's advocacy focuses on policy issues and rate design issues related to distributed solar generation, which includes solar photovoltaic (PV) generators with either fixed or tracking PV facilities. On behalf of its members and as pertinent to this Proceeding, Vote Solar supports energy policies relating to the growth of distributed solar generation in Colorado.

27. Intervenor WCPC is a Colorado limited liability company. WCPC is a developer and operator of Qualifying Facilities in Colorado.

B. The Witnesses and Exhibits.

28. The evidentiary record contains testimony and exhibits from the three-day evidentiary hearing.⁸ The ALJ heard the testimony of eight witnesses.

⁵ These Rules are found in the Rules Regulating Electric Utilities, Part 3 of 4 *Code of Colorado Regulations* 723.

⁶ The Commission has incorporated by reference this version of the FERC PURPA Rules. Pursuant to Rule 4 CCR 723-3-3008(f), no later amendment to, version of, or edition of these FERC PURPA Rules is incorporated into the Commission's rules. Unless the context indicates otherwise, reference in this Decision and reference in the evidentiary record to the FERC PURPA Rules are to those Rules as published in the *Code of Federal Regulations* on April 1, 2006.

⁷ This Rule is found in the Rules of Practice and Procedure, Part 1 of 4 *Code of Colorado Regulations* 723.

⁸ A transcript of each day of the evidentiary hearing is filed in this Proceeding. In this Decision, citation to the hearing transcript is: transcript date at page number:line number. For example, citation to the April 21 transcript at page 1, line 4 is: April 21 tr. at 1:4.

29. *Public Service* sponsored the testimony of Dolores R. Basquez, Scott B. Brockett, Nicholas J. Detmer, and Kent L. Scholl.

30. Ms. Dolores R. Basquez is a Principal Pricing Analyst employed by Public Service. Ms. Basquez's direct testimony is Hearing Exhibit No. 5, and her rebuttal testimony is Hearing Exhibit No. 6. Her oral testimony is found in the April 21 tr. at 200-48 and in the April 22 tr. at 7-9.

31. Mr. Scott B. Brockett is Director, Regulatory Administration and Compliance, and is employed by Xcel Energy Services, Inc. Mr. Brockett's direct testimony is Hearing Exhibit No. 1, his rebuttal testimony is Hearing Exhibit No. 2, his supplemental rebuttal testimony is Hearing Exhibit No. 3, and his second supplemental rebuttal testimony is Hearing Exhibit No. 4. His oral testimony is found in the April 21 tr. at 55-200.

32. Mr. Nicholas J. Detmer is Manager of Commercial Operations Compliance and Special Projects and is employed by Xcel Energy Services, Inc. Mr. Detmer's supplemental rebuttal testimony is Hearing Exhibit No. 7. His oral testimony is found in the April 22 tr. at 12-79.

33. Mr. Kent L. Scholl is a Senior Resource Planning Analyst and is employed by Xcel Energy Services, Inc. Mr. Scholl's direct testimony is Hearing Exhibit No. 8, his rebuttal testimony is Hearing Exhibit No. 9, and his supplemental rebuttal testimony is Hearing Exhibit No. 10. His oral testimony is found in the April 22 tr. at 156-281 and in the April 23 tr. at 7-37.

34. *Staff* sponsored the testimony of Gene L. Camp.

35. Mr. Gene L. Camp is employed by the Commission as the Chief of the Energy Section. Mr. Camp's cross-answer testimony is Hearing Exhibit No. 17, and his supplemental

answer testimony is Hearing Exhibit No. 18. His oral testimony is found in the April 22 tr. at 81-156.

36. *Vote Solar* sponsored the testimony of James F. (Rick) Gilliam.

37. Mr. James F. Gilliam is Program Director for Distributed Generation Regulatory Policy and is employed by Vote Solar. Mr. Gilliam's answer testimony is Hearing Exhibit No. 14, his supplemental answer testimony is Hearing Exhibit No. 15 and Highly Confidential Hearing Exhibit No. 15B, and his cross-answer testimony is Hearing Exhibit No. 16. His oral testimony is found in the April 23 tr. at 114-60.

38. *WCPC* sponsored the testimony of Eric R. Jacobson and Warren L. Wendling.

39. Mr. Eric R. Jacobson is the owner of WCPC and is employed by WCPC. Mr. Jacobson's answer testimony is Hearing Exhibit No. 11, and his supplemental answer testimony is Hearing Exhibit No. 12. His oral testimony is found in the April 23 tr. at 83-113.

40. Mr. Warren L. Wendling is employed by Wendling Consulting LLC as a Consulting Engineer. Mr. Wendling's supplemental answer testimony is Hearing Exhibit No. 13, Confidential Hearing Exhibit No. 13A, and Highly Confidential Hearing Exhibit No. 13B. His oral testimony is found in the April 23 tr. at 38-82.

41. Including prefiled testimonies, 49 exhibits were marked. Of the documents marked as exhibits, Hearing Exhibits Nos. 1-26,⁹ Nos. 28-33, Nos. 35-42, and Nos. 44-49¹⁰ were

⁹ In this Decision, citation to Hearing Exhibits that contain testimony is: Hearing Exhibit number at page number:line number. For example, citation to the direct testimony of PSCo witness Brockett at page 1, lines 1-10 is: Hearing Exhibit No. 1 at 1:1-10.

¹⁰ Hearing Exhibit No. 48 is the same as Hearing Exhibit No. 47 at 1.

admitted into evidence.¹¹ The Confidential Hearing Exhibit is No. 13A. The Highly Confidential Hearing Exhibits are No. 13B and No. 15B.

C. Current Small QF Tariff.

42. PSCo's current small Qualifying Facility (QF) tariff is found in the Company's Colo. PUC No. 7 Electric at Sheets P7 through P10.¹² This tariff provides that "QFs with a design capacity greater than 10 kW but not more than 100kW may, at the QF's option, sell power to the Company under standard rates, terms, and conditions" in the small QF¹³ tariff. Colo. PUC No. 7 Electric at Sheet P7.

43. The current method used to determine the avoided cost rates pairs an avoided energy cost based on the variable cost of a coal-fired baseload unit with an avoided capacity cost based on the results of a competitive bidding process used by PSCo to acquire the additional resources necessary to serve future load.

44. In the current standard rate tariff, the *avoided capacity cost rates* are based on the prices contained in bids submitted to PSCo before 2011. These avoided capacity costs do not include the recent resource planning assumptions approved by the Commission in the Company's 2011 Electric Resource Plan (2011 ERP) proceeding.¹⁴ In the current tariff, the capacity payment component is expressed in dollars per kilowatt month (\$/kW-Mo).

¹¹ The following exhibits were marked but were not admitted: No. 27 (not offered), No. 34 (not offered), and No. 43 (offered but not admitted).

¹² Unless the context indicates otherwise, when the ALJ discusses the QFs to which the proposed tariff would apply, the reference is to QFs with a design capacity of not more than 100kW. Unless the context indicates otherwise, reference in this Decision to the QF tariff is to Colo. PUC No. 7 Electric at Sheets P7 through P10.

¹³ As used in this Decision, unless the context indicates otherwise, the terms small QF and small QFs refer to QFs with a design capacity of not more than 100kW.

¹⁴ This was Proceeding No. 11A-869E, *In the Matter of the Application of Public Service Company of Colorado for Approval of its 2011 Electric Resource Plan*.

45. In the current standard rate tariff, the *avoided energy cost rates* are determined by a method that assumes the Company's next planned generation addition is a base-load coal facility; thus, the energy rates are calculated by looking at the costs of coal used at the Company's Pawnee Station from a recent historic 12-month period adjusted by the Bituminous Coal Producer Price Index. This method has been in place since the 1980s, when Public Service's next planned generation plant was Pawnee II.¹⁵ In the current tariff, the energy payment component is expressed in cents per kilowatt hour (¢/kWh).

46. No QF currently subscribes to the PSCo tariff that is the subject of this Proceeding.

D. Description of Models: Cost Calculator and Strategist.

47. There are two Company proprietary models discussed in this Proceeding and this Decision: the Cost Calculator model and the Strategist model. Each is described here.

48. *Cost Calculator* is described in detail in Hearing Exhibit No. 7 at Exhibit NJD-1 at 20-23. Briefly, Cost Calculator is a model that

estimates the incremental costs associated with the increase in actual load in a given hour resulting from short-term wholesale Gen Sales and Gen REC Bundled Sales by assigning the most expensive dispatchable resources to such sales. After assignments are made to such sales, the residual production costs are assigned to Native Load. Depending upon the applicable average system heat rate curve during the hour for which the sale is made, the average per unit production cost assigned to Native Load may be less than, greater than, or equal to the average per unit production cost assigned to sales for that hour. On an hourly basis, the Cost Calculator estimates Generation Book sales costs, which include Gen Sales and Gen REC Bundled Sales[,] based upon [the set of business rules that is set out in Hearing Exhibit No. 7 at Exhibit NJD-1 at 20-23]. For the purposes of this cost assignment, the electric energy component of a Gen REC Bundled Sale is treated the same as a Gen Sale.

¹⁵ Pawnee II was the next generation plant that, in the mid-1980s, the Company expected that it would add to its system to meet load requirements. This plant was expected to be located at PSCo's Pawnee Station.

Hearing Exhibit No. 7 at Exhibit NJD-1 at 20⁶ Public Service adjusts the Cost Calculator database to make sure that the data are accurate before settling contracts and finalizing cost assignments.

49. *Strategist* is

a computer based model specifically designed to represent the many characteristics of an electric utility's power supply system and to simulate economic dispatch of the generating resources in that system to meet customer demand for electric power (a.k.a. load) in the lowest cost manner. The model also has the capability to determine the least-cost mix of generation resources that should be added to an electric system to help serve future load growth. Public Service has used *Strategist* in developing its last three resource plans submitted to the Commission.

Strategist incorporates a wide range of variables that can be used to represent various types of electric generating facilities, e.g. coal, gas, wind, solar and storage facilities. *Strategist* contains four basic modules ... that work in concert to simulate the operation of the existing units as well as the new units that are added to the system in future years to meet load growth. The model tracks and reports capital costs (and the associated revenue requirements), operations and maintenance costs, fuel costs, emissions and associated costs, integration costs for solar and wind[,] and coal cycling costs.

Hearing Exhibit No. 41 at 1.

III. **BURDEN OF PROOF AND RELATED PRINCIPLES**

50. As the party that seeks Commission approval or authorization, Public Service bears the burden of proof with respect to the relief sought; and the burden of proof is preponderance of the evidence. Section 24-4-105(7), C.R.S.; § 13-25-127(1), C.R.S.; Rule 4CCR 723-1-1500. "The evidence underlying the agency's decision must be adequate to support a reasonable conclusion." *City of Boulder v. Colorado Public Utilities Commission*, 996 P.2d 1270, 1278 (Colo. 2000) (quoting *CF&I Steel, L.P. v. Public Utilities Commission*, 949 P.2d 577, 585 (Colo. 1997)). The preponderance standard requires the finder of fact to

¹⁶ The terms used in this description are defined in Hearing Exhibit No. 7 at Exhibit NJD-1 at 8-9.

determine whether the existence of a *contested fact* is more probable than its non-existence. *Swain v. Colorado Department of Revenue*, 717 P.2d 507 (Colo. App. 1985). A party has met this burden of proof when the evidence, on the whole and however slightly, tips in favor of that party.

51. An intervenor that proposes a new method, a change to the Company's proposed method, or a condition to be placed on the relief granted by the Commission has the same burden of proof -- *i.e.*, preponderance of the evidence -- with respect to its advocated method, change, or condition.

52. In addition, Public Service's standard rates for purchasing capacity and energy from small QFs, the methods used to calculate those standard rates, and related issues are matters of public interest. The Commission has an independent duty to determine matters that are within the public interest. *Caldwell v. Public Utilities Commission*, 692 P.2d 1085, 1089 (Colo. 1984). As a result, the Commission is not bound by the Parties' proposals. The Commission may do what the Commission deems necessary to assure that the final result is just, is reasonable, and is in the public interest *provided* the record supports the result *and provided* the reasons for the choices made (*e.g.*, policy decisions) are stated.

53. Finally, this Proceeding involves setting the avoided capacity payment rate and the avoided energy payment rate for the Company's purchase of capacity and energy from small QFs. Rate-setting "is inherently a legislative function" (*City of Boulder v Public Service Company*, 996 P.2d 198, 204 (Colo. App. 1999)) and not an exact science (*Public Utilities Commission v. Northwest Water Corporation*, 168 Colo. 154, 551 P.2d 266 (1963)). Thus, the Commission "may set rates based on the evidence as a whole" and "need not base its decision on specific empirical support in the form of a study or data." *Colorado Office of Consumer*

Counsel v. Colorado Public Utilities Commission, 275 P.3d 656, 660 (Colo. 2012). Rate-setting includes determination of the appropriate method or methods to be used to determine rates.

54. In reaching her decision in this matter, the ALJ is mindful of these principles and of the Commission's duty.

IV. **AVOIDED COSTS**

A. Background.

55. In 1978, PURPA was enacted and became effective. PURPA aims to encourage the development of qualifying cogeneration facilities and qualifying small power production facilities (collectively, these are QFs) by, among other things, requiring electric utilities to purchase electric energy from QFs and requiring electric utilities to sell electric energy to QFs. Section 824a-3(a) of title 16 U.S.C. (Hearing Exhibit No. 19).

56. The definition of qualifying cogeneration facility is found in 16 U.S.C. § 796(18)(B). This definition is not pertinent to the issues in this Proceeding.

57. The definition of small power production facility is found in 16 U.S.C. § 796(17)(A). A small power production facility, generally speaking, “produces electrical energy solely by the use of, as a primary energy source, biomass, waste, renewable resources, geothermal resources or any combination thereof; and [in combination with other facilities located at the same site,] has a power production capacity [that] is not greater than 80 megawatts[.]” Section 796(17)(A) of 16 U.S.C. In Order No. 69,¹⁷ FERC interpreted the term renewable resources to include solar, water, and wind. Hearing Exhibit No. 17 at Exhibit GLC-01 at 2.

¹⁷ Order No. 69 is discussed *infra*.

58. As described by FERC, Congress enacted PURPA to address three major obstacles faced by a QF

seeking to establish interconnected operation with a utility ... First, a utility was not generally required to purchase the [QF's] electric output, at an appropriate rate. Secondly, some utilities charged discriminatorily high rates for back-up service to [QFs]. Thirdly, a [QF] which provided electricity to a utility's grid ran the risk of being considered an electric utility and thus being subjected to State and Federal regulation as an electric utility.

Sections 201 and 210 of PURPA are designed to remove these obstacles. Each electric utility is required under section 210 to offer to purchase available electric energy from [QFs]. For such purchases, electric utilities are required to pay rates which are just and reasonable to the ratepayers of the utility, in the public interest, and which do not discriminate against [QFs]. Section 210 also requires electric utilities to provide electric service to qualifying facilities at rates which are just and reasonable, in the public interest, and which do not discriminate against [QFs]. Section 210(e) of PURPA provides that [FERC] can exempt qualifying facilities from State regulation regarding utility rates and financial organization, from Federal regulation under the Federal Power Act (other than licensing under Part I), and from the Public Utility Holding Company Act.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 2.

59. PURPA directed FERC to promulgate rules on a number of topics, including the price to be paid by electric utilities for their purchases of capacity and energy from QFs.

60. In 1980, by Order No. 69,¹⁸ FERC promulgated final rules implementing PURPA. Order No. 69 was published in 45 Fed. Reg. 12214-37 (1980). The *Federal Register* notice at 12214-33 contains FERC's preamble discussion of PURPA, the FERC PURPA Rules, and FERC's interpretation of those Rules. The *Federal Register* notice at 12233-37 contains the final FERC PURPA Rules that became effective on March 20, 1980. The FERC PURPA Rules

¹⁸ FERC Order No. 69, as published in the *Federal Register*, is in the evidentiary record in this Proceeding as Hearing Exhibit No. 17 at Exhibit GLC-01 and as Hearing Exhibit No. 14 at Exhibit RG-5. For ease of reference and consistency, in this Decision, the ALJ cites to Hearing Exhibit No. 17 at Exhibit GLC-01.

discussed in Order No. 69 and cited in this Decision contain the same language as the FERC PURPA Rules published in the *Code of Federal Regulations* on April 1, 2006.

61. Order No. 69 is recognized as the seminal authoritative agency decision interpreting: (a) PURPA; (b) the obligations of electric utilities and QFs under PURPA; and (c) FERC PURPA Rules. FERC's interpretation of PURPA and its explanation of the FERC PURPA Rules contained in Order No. 69 have been relied upon and cited by federal and state courts, by FERC, by this Commission, and -- importantly -- by each of the Parties in this Proceeding in their statements of position. There is no dispute that Order No. 69 is persuasive, and may be considered controlling, authority on the issues in this Proceeding.

62. As relevant here, in Order No. 69, FERC stated:

These rules provide that electric utilities must purchase electric energy and capacity made available by [QFs] at a rate reflecting the cost that the purchasing utility can avoid as a result of obtaining energy and capacity from these sources, rather than generating an equivalent amount of energy itself or purchasing the energy or capacity from other suppliers.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 2.

63. Section 292.304 of 18 CFR sets out the requirements concerning rates to be paid for purchases of electric capacity and energy from QFs.¹⁹ Section 292.304(a)(2) of 18 CFR states that no electric utility is required to pay more than its avoided costs for purchases from QFs.

64. In Order No. 69, FERC explained its interpretation of the term avoided cost as that term is used in PURPA and in the FERC PURPA Rules:

The costs which an electric utility can avoid by making such purchases generally can be classified as "energy" costs or "capacity" costs. *Energy costs* are the variable costs associated with the production of electric energy (kilowatt-hours). They represent the cost of fuel, and some operating and maintenance expenses.

¹⁹ The FERC PURPA Rules cited in the Decision are set out *infra*.

Capacity costs are the costs associated with providing the capability to deliver energy; they consist primarily of the capital costs of facilities.

* * *

The Commission has added the term “incremental” to modify the costs which an electric utility would avoid as a result of making a purchase from a qualifying facility. Under the principles of economic dispatch, utilities generally turn on last and turn off first their generating units with the highest running cost. At any given time, an economically dispatched utility can avoid operating its highest-cost units as a result of making a purchase from a qualifying facility. The utility’s avoided incremental costs (and not average system costs) should be used to calculate avoided costs. With regard to capacity, if a purchase from a qualifying facility permits the utility to avoid the addition of new capacity, then the avoided cost of the new capacity and not the average embedded system cost of capacity should be used.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 3 (emphasis supplied).

65. In addressing the requirements concerning rates to be paid to QFs, Order No. 69 states:

The Commission interprets its mandate under section 210(a) to prescribe “such rules as it determines necessary to encourage cogeneration and small power production ...” to mean that the total costs to the utility and the rates to its other customers should not be greater than they would have been had the utility not made the purchase from the qualifying facility or qualifying facilities.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 4-5. Order No. 69 further explains that, by requiring payment of the full avoided costs, FERC “set the rate for purchases at a level it believes appropriate to encourage cogeneration and small power production, as required by section 210 of PURPA.” *Id.* at 8.

66. The FERC PURPA Rules require, for small QFs, standard rates that are equal to the purchasing utility’s avoided cost. Section 292.304(c) of 18 CFR establishes how the calculation of the standard rates will be performed. As stated in Order No. 69, FERC

believes that the establishment of standard rates for purchases can significantly encourage cogeneration and small power production, provided that these standard rates accurately reflect the costs that the [purchasing] utility can avoid as a result of such purchases.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 10. In determining avoided costs, states must consider, to the extent possible, a variety of factors, including the individual and aggregate value of QF energy and capacity available on the system. 18 CFR § 292.304(e).

67. Section 292.304(c)(3)(ii) of 18 CFR provides that, in setting the avoided cost rate for purchases from QFs, a utility “[m]ay differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies.” This FERC PURPA Rule allows the utility to offer different purchase rates based on how the utility’s avoided costs differ based on the technology of the QF. In Order No. 69, FERC explained this Rule:

Several commenters observed that the patterns of availability of particular energy sources can and should be reflected in standard rates. An example of this phenomenon is the availability of wind and photovoltaic energy on a summer peaking system. If it can be shown that system peak occurs when there is bright sun and no wind, rates for purchases could provide a higher capacity payment for photovoltaic cells than for wind energy conversion systems. For systems peaking on dark windy days, the reverse might be true. Subparagraph (3)(ii) thus provides that standard rates for purchases may differentiate among qualifying facilities on the basis of the supply characteristics of the particular technology.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 11.

68. Section 292.301(b)(1) of 18 CFR states that nothing in the FERC QF Rules regulating sales and purchases between QFs and electric utilities

[l]imits the authority of any electric utility or any qualifying facility to agree to a rate for any purchase, or terms or conditions relating to any purchase, which differ from the rate or terms or conditions which would otherwise be required by [the FERC QF Rules].

69. The principle that, under PURPA-required standard rates, an electric utility cannot pay a rate for capacity or energy (or both) purchased from a QF that exceeds that utility’s avoided cost is a basic premise of PURPA and of the FERC QF Rules.

70. PURPA requires each state to implement the FERC PURPA Rules and delegates to the states the responsibility to determine avoided costs. One of the principal purposes of

Order No. 69 is to assist states in fulfilling that responsibility by providing FERC's guidance interpreting PURPA and the FERC PURPA Rules. When setting avoided cost rates and when considering methods for determining a utility's avoided costs, the Commission has relied heavily on the guidance in Order No. 69.

71. As required by PURPA, the Commission promulgated rules to implement the FERC PURPA Rules with respect to Colorado's jurisdictional electric utilities, including Public Service. In November 1982, the Commission's initial Rules Implementing Sections 201 and 210, PURPA, Small Power Production and Cogeneration Facilities, 4 CCR 723-19, became effective. The Commission subsequently amended these Rules. The current PUC PURPA Rules are found in Rules 4CCR 723-3-3900 to 723-3-3976. The Commission has incorporated by reference the FERC PURPA Rules into the PUC PURPA Rules.

72. Rules concerning utilities' purchase obligations are found in Rule 4 CCR 723-3-3902, which mirrors federal requirements with respect to avoided costs and standard rates. As in the FERC PURPA Rules, Rule 4 CCR 723-3-3902 provides that each utility must pay QFs for energy and capacity purchases at a rate based on the utility's avoided costs and must file tariffs setting standard rates for purchases from small QFs.

73. Rule 4 CCR 723-3-3902(e) states: "Nothing in this rule requires a utility to pay more than its avoided costs of energy and capacity, of energy, or of capacity for purchases from qualifying facilities." From the first PUC PURPA Rules to the current rules, the PUC PURPA Rules have contained virtually identical language. *See, e.g.,* 1982 PUC PURPA Rule 3.503 (same).

74. The principle that, under PURPA-required standard rates, an electric utility cannot pay a rate for capacity and/or energy purchased from a QF that exceeds that utility's avoided cost was, and remains, a basic premise of PURPA and of the PUC PURPA Rules.

75. On January 21, 1982, by Decision No. C82-0073,²⁰ the Commission determined its first PUC PURPA Rules. In that Decision, the Commission established principles from which it has notwaivered:

It is clear that the fundamental purpose of Section 210 of PURPA is to encourage small power production and cogeneration. However, it is also clear that utilities are not required by PURPA to guarantee the success of small power production or cogeneration facilities. In this latter connection, it must be recognized that the rate for purchase by an electric utility of energy from a [QF] normally may not exceed the incremental cost to the utility for alternative electric energy.

* * *

Although utilities are obligated by PURPA to pay avoided cost rates to [QFs] for power, the avoided cost rate may not exceed the amount that it would cost the utility to generate or otherwise purchase such power from other sources. In other words, the consumers of electric utilities are not required by PURPA to unduly finance small power production or cogeneration.

Decision No. C82-0073 at 11-12, citing with approval Order No. 69. *See also* Decision No. C82-0073 at 20 ("the avoided cost rate satisfies the requirements of FERC Rule 292.304(b)(2) if such rate equals the utilities [*sic*] avoided costs. Hence, it is clear that the avoided cost purchase rate required by PURPA and FERC Rules for capacity and energy is no more, nor less than the marginal cost the utility avoids by purchasing energy and/or capacity from" QFs).

²⁰ This Decision was issued in Case No. 5970, *In the Matter of the Rules of the Public Utilities Commission Regulating Rates and Service of Cogenerators and Small Power Producers*.

76. On January 17, 1984, by Decision No. C84-67,²¹ the Commission established the method that Public Service was to use to determine the avoided capacity and avoided energy costs that it would use to establish its payments to QFs.

77. In that Decision, the Commission determined that *PSCo's avoided capacity costs* were the costs of Pawnee II, PSCo's next planned plant addition. Decision No. C84-67 at 7.

78. The Commission also determined that *PSCo's avoided energy costs* were [to] track the cost of the energy being provided by the hypothetical unit(s) used to determine the capacity costs. In this case, the energy costs relating to Pawnee I are the most appropriate to currently determine energy payments.

Id. at 9. This is the avoided energy cost method used at present to calculate PSCo's avoided energy cost rates for small QFs. The current energy rates are calculated based on a recent historic 12-month cost of coal at Pawnee Station adjusted by the Bituminous Coal Producer Price Index.

79. On June 9, 1988, by Decision No. C88-0726,²² the Commission approved a change in the method PSCo used to establish its avoided capacity costs. The Commission determined that Public Service would use a biennial bidding procedure to establish its avoided capacity costs. The Commission found that, for QFs other than small QFs,

a bidding procedure is necessary to ensure both the reliability and adequacy of Public Service's system and that the customers of Public Service will not over or under-pay for QF power. Moreover, a bidding procedure will enable Public

²¹ This Decision was issued on January 17, 1984 in I&S Dockets No. 1603 and No. 1604. I&S Docket No. 1603 was commenced by PSCo's filing proposed tariffs containing terms, conditions, and rate formulae pertaining to standard rates for purchases from small QFs.

²² This Decision was issued in Application No. 38771, *In Re: The Application of the Public Service Company of Colorado Regarding Cogeneration and Small Power Production Projects (Qualifying Facilities or QFs)*.

Service to obtain the lowest-priced QF power available which will enure to the benefit of its customers.

Decision No. C88-0726 at 7.

80. On December 30, 1992, by Decision No. C92-1646,²³ the Commission adopted its first Electric Integrated Resource Planning (IRP) Rules. Under those rules, as pertinent here, PSCo's biennial QF bidding process remained a separate process; however, the results were included in PSCo's IRP. The 1992 IRP Rules were in effect January 30, 1993, until July 29, 1996.

81. In April 1996, by Decisions No. C96-0373 and No. C95-1264,²⁴ the Commission adopted new IRP Rules (1996 IRP Rules) and, as pertinent here, created one bidding procedure for an electric utility's acquisition of supply-side resources, including purchases from QFs. Decision No. C95-1264 at 12-14. The 1996 IRP Rules superseded PSCo's biennial QF bidding process and made a bidding process mandatory for all purchases of capacity that were not exempted. The 1996 IRP Rules were in effect from July 30, 1996 until December 29, 2002.

82. Since the 1996 IRP Rules, the Commission has gone through several iterations of its rules pertaining to electric utility resource planning. The current iteration is Electric Resource Planning, Rules 4 CCR 723-3-3600 through 723-3-3624.²⁵ Throughout, it has been, and remains,

²³ This Decision was issued in Proceeding No. 91R-642E, *Investigation into the Development of Rules Concerning Integrated Resource Planning*.

²⁴ Both Decisions were issued in Proceeding No. 95R-071E, *Re: The Investigation into the Possible Modification of the Rules Concerning Integrated Resource Planning, 4 CCR 723-21, and the Rules Implementing Sections 201 and 210 of PURPA, Small Power Production and Cogeneration Facilities, 4 CCR 723-19*. Decision No. C95-1264 was issued on December 15, 1995; and Decision No. C96-0373 was issued on April 5, 1996.

Decisions No. C96-0373 and No. C95-1264 must be read together. See Decision No. C96-0373 at 4 & n. 1 (affirming findings and conclusions contained in Decision No. C95-1264 to the extent they are not changed or amended).

²⁵ The Company's 2011 ERP, its 2013 All-Source Solicitation, and its resource acquisitions for the Resource Acquisition Period 2014-2018 were reviewed by the Commission and implemented by the Company pursuant to these Rules.

the Commission's policy that a competitive acquisition process will normally be used to acquire new utility resources. The competitive bid process should afford all resources an opportunity to bid, and all new utility resources will be compared in order to determine a cost-effective resource plan (i.e., an all-source solicitation).

Rule 4 CCR 723-3-3611(a).

83. Thus, since 1988, Public Service has used the competitive bidding process in the resource acquisition process to establish the avoided cost for capacity it purchases from QFs.

84. It is important to note that the standard for establishing avoided cost rates is not perfection. As recognized by FERC, when setting avoided cost rates, "a rate that reflects a reasonable approximation of avoided cost at the time of the [QF] contract complies with PURPA's avoided cost limit." *Orange and Rockland Utilities, Inc., Rockland Electric Company and Pike County Light & Power Company*, 43 FERC ¶ 61,067, 61,196 (Apr. 14, 1988). The same principle applies to setting standard rates.

85. It is also important to note that the PURPA requirement that an electric utility make purchases from QFs is not absolute. *See, e.g., Phoenix Power Partners, L.P. v. Colorado Public Utilities Commission*, 952 P.2d 359, 366-67 (Colo. 1998) (discussion of Commission decisions regarding utility's obligation to purchase from QFs); Decision No. C95-0245²⁶ at 12-13 (QFs' right to sell capacity and energy to utility and QFs' right to be paid the utility's avoided costs "not the absolute and unyielding rights Phoenix portrays them to be").

86. In Order No. 69, FERC discussed the electric utility's obligation to purchase from a QF when the "electric utility has sufficient capacity and is not planning to add any new

²⁶ This Decision was issued on March 17, 1995 in Proceeding No. 93S-210E, *Re: The Investigation of Category No. 4A On-System Power Purchase Agreement between Public Service Company of Colorado and Phoenix Power Partners, L.P., Filed under Advice Letter No. 1199-Electric*.

capacity to its system[.]” Hearing Exhibit No. 17 at Exhibit GLC-01 at 14. In that discussion, FERC made it clear that: (a) capacity from a QF may have value even if the purchasing utility has sufficient capacity; and (b) the utility’s having sufficient capacity does not affect the QF’s ability to obtain an energy payment based on the utility’s avoided energy costs.

B. Relevant Statutory and Rule Language.

1. PURPA.

87. Section 824a-3(b) of title 16 U.S.C.²⁷ states:

(b) Rates for Purchases by Electric Utilities. The rules prescribed [by FERC] under [§ 210(a) of PURPA] shall insure that, in requiring any electric utility to offer to purchase electric energy from any [QF], the rates for such purchase --

(1) shall be just and reasonable to the electric consumers of the electric utility and in the public interest, and

(2) shall not discriminate against [QFs].

No such rule prescribed under [§ 210(a) by FERC] shall provide for a rate which exceeds the incremental cost to the electric utility of alternative electric energy.

Hearing Exhibit No. 19 at 1.

88. Section 824a-3(b) of title 16 U.S.C. states:

(d) “Incremental cost of alternative electric energy” defined. For purposes of [§ 210 of PURPA], the term “incremental cost of alternative electric energy” means, with respect to electric energy purchased from a [QF], the cost to the electric utility of the electric energy which, but for the purchase from such [QF], such utility would generate or purchase from another source.

Hearing Exhibit No. 19 at 2.

2. Rules.

89. FERC defines avoided cost as:

(6) *Avoided costs* means the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying

²⁷ This is also referred to as Section 210(b) of PURPA.

facility or qualifying facilities, such utility would generate itself or purchase from another source.

Section 292.101(b)(6) of 18 CFR (Hearing Exhibit No. 17 at Exhibit GLC-01 at 21)(italics in original).

90. The Commission defines avoided cost as:

(a) “Avoided cost” means the incremental or marginal cost to an electric utility of electrical energy or capacity, or both, but for the purchase of such energy and/or capacity from qualifying facility or qualifying facilities, the utility would generate itself or would purchase from another source.

Rule 4 CCR 723-3-3901(a).

91. FERC defines supplementary power as:

(8) *Supplementary power* means electric energy or capacity supplied by an electric utility, regularly used by a qualifying facility in addition to that which the facility generates itself.

Section 292.101(b)(8) of 18 CFR (Hearing Exhibit No. 17 at Exhibit GLC-01 at 21)(italics in original).

92. As pertinent here, 18 CFR § 292.301 provides:

(a) *Applicability*. This [Subpart C] applies to the regulation of sales and purchases between qualifying facilities and electric utilities.

(b) *Negotiated rates or terms*. Nothing in this subpart:

(1) Limits the authority of any electric utility or any qualifying facility to agree to a rate for any purchase, or terms or conditions relating to any purchase, which differ from the rate or terms or conditions which would otherwise be required by this subpart[.]

* * *

Hearing Exhibit No. 17 at Exhibit GLC-01 at 21 (italics in original).

93. Section 292.303 of 18 CFR sets out the electric utility’s obligations to QFs. As pertinent here, 18 CFR § 292.303 provides:

(a) *Obligation to purchase from qualifying facilities.* Each electric utility shall purchase, in accordance with [18 CFR] § 292.304, any energy and capacity which is made available from a qualifying facility[.]

* * *

(b) *Obligation to sell to qualifying facilities.* Each electric utility shall sell to any qualifying facility, in accordance with [18 CFR] § 292.305, any energy and capacity requested by the qualifying facility.

* * *

(c) *Parallel operation.* Each electric utility shall offer to operate in parallel with a qualifying facility, provided that the qualifying facility complies with any applicable standards established in accordance with [18 CFR] § 292.308.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 22 (italics in original).

94. Section 292.304(c)(3) of 18 CFR establishes the requirements for standard rates for purchases from small QFs. As pertinent here, that Rule provides:

(3) The standard rates for purchases [from small QFs]:

(i) Shall be consistent with [18 CFR §§ 292.304(a) and 292.304(e)] ... ; and

(ii) May differentiate among qualifying facilities using various technologies on the basis of the supply characteristics of the different technologies.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 22.

95. Section 292.304(a) of 18 CFR contains the standards for avoided cost rates. The Rule provides:

(a) *Rates for purchases.*

(1) Rates for purchases [from QFs] shall:

(i) Be just and reasonable to the electric consumer of the electric utility and in the public interest; and

(ii) Not discriminate against [QFs].

(2) Nothing in [Subpart C] requires any electric utility to pay more than the avoided costs for purchases.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 22 (italics in original).

96. Section 292.304(e) of 18 CFR contains the factors to be taken into consideration when determining avoided costs. As relevant here, the Rule states:

(e) *Factors affecting rates for purchases* [from QFs].

* * *

(2) The availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods, including [seven listed considerations]; and

(3) The relationship of the availability of energy or capacity from the qualifying facility as derived in [18 CFR § 292.304(e)(2)], to the ability of the electric utility to avoid costs, including deferral of capacity additions and the reduction of fossil fuel use; and

(4) The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the purchasing utility generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 22-23 (*italics in original*).

V. SMALL QF AVOIDED COST PAYMENT RATES

97. Public Service maintains that the current avoided capacity cost method does not accurately reflect the costs that the Company likely will avoid by purchasing capacity from various small QF technologies, which are likely to be intermittent resources. In addition, Public Service maintains that the current method for determining avoided energy costs, which has been in place since the late 1980s, is outdated and does not reflect the Company's avoided energy costs.

98. To match better the capacity payment rate component and the energy payment rate component of the standard rates, the Company proposes a method for calculating PSCo's avoided energy costs and a method for calculating PSCo's avoided capacity costs. These methods will be used to determine standard rates for purchases from small QFs. To recognize the differences in the production profiles of various small QF technologies, Public Service

proposes a method that provides differentiated standard rates in the following generation categories: PV-Fixed; PV-Tracking; Wind; Hydroelectric (or Hydro); and Other.

A. At Issue: Rates or Method

99. In the proposed tariffs that accompanied the Advice Letter and the Amended Advice Letter, Public Service proposed -- and requested that the Commission approve -- specific standard rates for the Company's purchase, under the tariff, of capacity and energy from small QFs. During the course of the Proceeding, Public Service modified its request. The Company now seeks Commission approval of the methods to be used to determine the avoided capacity costs and the avoided energy costs. Public Service no longer requests approval of specific rates.

1. Positions of the Parties.

a. Public Service Company.

100. In support of its request that the focus of this Proceeding shift from the actual rates to the method for determining the avoided costs, Public Service states: (a) over the course of this Proceeding and in response to Intervenor's testimony, the Company has refined both its proposed method for determining the avoided capacity cost rates and its proposed method for determining the avoided energy cost rates;²⁸ and (b) the Intervenor's note, and the Company agrees, that the historical data PSCo used to calculate the proposed rates for the energy rate component are stale and should not be the basis for the energy rate component to be in effect for the remainder of 2014 and calendar year 2015; and (c) as a result, Public Service no longer supports, and essentially has withdrawn, the capacity payment rate and the energy payment rate in the proposed QF tariffs at issue in this Proceeding.

²⁸ Each proposed method is discussed *infra*.

101. Public Service proposes that, after the Commission determines the method that the Company is to use to determine both the capacity rate and energy rate components, the Company will file an Advice Letter with tariff sheets containing proposed rates calculated using the Commission-approved methods.

b. Western Colorado Power Company.

102. WCPC is the only intervenor to address this issue.

103. WCPC opposes, or at least questions, the Company's request because: (a) 18 CFR § 292.304(c) requires that tariffed standard rates, not a method, be available to small QFs; (b) the Company made its proposal at the 23rd hour and, as a result, Intervenors did not have an opportunity to file testimony in response;²⁹ (c) assuming the Company's method is approved, there are unanswered implementation questions (*e.g.*, the historical period that PSCo will use to determine the energy payment rate component is unknown; whether (and how) interested parties will have an opportunity to review, and to challenge the proposed actual rates, is unclear); and (d) because the Commission must determine whether an approved method results in just, reasonable, and non-discriminatory rates, focus on method should not be allowed to distract from the ultimate issue: whether the standard rates are non-discriminatory to QFs and just and reasonable to ratepayers.

²⁹ "WCPC strenuously objects to PSCo being allowed, at the very last moment, to change the basis of this proceeding from a tariff rate to a purported methodology. Such a result contravenes 18 CFR § 292.304(c) and is grossly unfair, particularly where WCPC's suggested methods were disallowed earlier in this proceeding." WCPC Statement of Position at 25 & n. 139.

2. Discussion and Conclusion.

104. The ALJ finds that the issues raised by WCPC can be -- and will be -- addressed in the future proceeding in which the Company proposes its standard rates derived using a Commission-approved method.

105. In addition, until the Commission approves new standard rates or allows them to go into effect by operation of law, small QFs will continue selling to Public Service under the existing tariff. Thus, at all times tariffed standard rates will be available.

106. Finally, the ALJ finds unpersuasive WCPC's assertion that it is prejudiced by PSCo's request to focus on methods because "WCPC's suggested methodologies were disallowed earlier in this proceeding" (WCPC Statement of Position at 25& n. 139). First, the record contains, and the ALJ discusses in this Decision, a WCPC method for determining avoided capacity costs and its method for determining avoided energy costs. Second, the ALJ assumes that WCPC refers to the ruling that granted Public Service's Motion to Strike Portions of Supplemental Answer Testimony and Exhibits of Warren Wendling. In Decision No. R14-0767-I,³⁰ the ALJ ordered stricken portions of WCPC witness Wendling's supplemental answer testimony, which was filed on March 17, 2014. In granting the motion, the ALJ found

that Public Service has met its burden: (a) for the reasons stated by Public Service; (b) because the issues that WCPC seeks to address in the disputed Wendling testimony were known at the time WCPC filed its original answer testimony, WCPC could have conducted discovery and, in the original WCPC answer testimony, developed and presented the recommendations and additional options presented in the disputed Wendling testimony; and (c) onbalance, it is unfair and prejudicial to the other parties to allow WCPC, at this late date, to

³⁰ This Interim Decision was issued on July 8, 2014 in this Proceeding.

present a new alternative avoided cost calculation method and new proposed capacity payment rates and new proposed energy rates.

Decision No. R14-0767-I at ¶ 88.³¹

107. For these reasons, the ALJ finds no prejudice to any party if the Company's request to address, in this Proceeding, the methods for determining avoided costs (and not the proposed standard rates) is granted. As a result, this Proceeding will address only the methods for determining avoided cost rates.

108. Because Public Service has withdrawn the proposed rates from consideration in this Proceeding, the ALJ will suspend permanently the effective date of the proposed tariff sheets appended to the Amended Advice Letter.

B. Capacity Payment Rate Component of Standard Rate.

109. The Company, Vote Solar, and WCPC each made a proposal with respect to the method for calculation of avoided capacity costs. Although there is testimony about the actual standard rates that may be derived using one or more of the proposed methods, this Decision focuses only on the methods. Each proposed method is described below.

110. *Public Service's method for calculating avoided capacity costs* is set out in Hearing Exhibit No. 6 at Revised Exhibit DRB-2. Briefly, the PSCo method is:

In Step 1, Public Service starts with the capital and fixed Operation and Maintenance (O&M) cost of a generic combustion turbine (CT) used by the Company in its 2011 ERP. The capital cost is set at the average of a two CT project. The source of the cost estimates for the two CTs is 2011 ERP Table 2.8-3(a) (Hearing Exhibit No. 41³²) at 2-227.

³¹ The referenced original WCPC answer testimony is the Answer Testimony and Exhibits of Eric R. Jacobson, which is Hearing Exhibit No. 11.

³² Hearing Exhibit No. 41 consists of pages 2-216 through 2-228, which is § 2-8 (Phase I Plan Development and Modeling Details), of Volume II Technical Appendix of the 2011 ERP. Hearing Exhibit No. 33 is page 2-227 of Volume II Technical Appendix of the 2011 ERP.

In Step 2, Public Service adjusts the nameplate rating of the two CTs for their summer rating. This adjustment increases the \$/kW-Mo cost.

In Step 3, Public Service uses the Company's construction escalation factor to derive the \$/kW-Mo value for capital and fixed O&M costs for the two CT project in each of the next ten years.

In Step 4, Public Service shows the costs of ancillary services that are charged under the Company's FERC Open Access Transmission Tariff. These services are Reactive Supply and Voltage Control; Regulation and Frequency Response; Operating Reserve - Spinning; and Operating Reserve - Supplemental.

In Step 5, Public Service subtracts the ancillary service costs from the avoided CT costs. This decreases the avoided CT costs.

In Step 6, Public Service multiplies the Step 5 results by 12 to derive annual avoided capacity costs in \$/kW-year (\$/kW-Yr).

In Step 7, Public Service calculates the Surplus Capacity Credits on a \$/kW-Yr basis. The figures in Hearing Exhibit No. 6 at Revised Exhibit DRB-2 at 2 are those approved by the Commission in the 2011 ERP for use in 2014-2018.

In Step 8, Public Service substitutes, for 2014-2018, the Surplus Capacity Credit for the avoided capacity costs derived in Step 6.

In Step 9, Public Service levelizes the ten-year stream of capacity values using the Company's after-tax Weighted Average Cost of Capital (WACC).

In Step 10, Public Service converts the levelized annual avoided capacity cost to a monthly avoided capacity cost.

In Step 11, Public Service applies the technology-specific Generation Capacity Credit (GCC) percentages to the levelized monthly avoided capacity cost of the two CT project to determine the technology-specific monthly avoided capacity cost rate in dollars per kilowatt-month (\$/kW-Mo). Public Service determines the GCC by using technology-specific studies to determine the appropriate differentiations among the various forms of non-dispatchable QF technologies *i.e.*, PV-Fixed; PV-Tracking; Wind; Hydroelectric; and Other).

In Step 12, Public Service applies a technology-specific annual capacity factor to the costs derived in Step 11 and converts the avoided capacity cost rates for each technology from *\$/kW-Mo payment* to a *\$/MWh payment*.

In Step 13, Public Service determines the line loss savings expected when the QF generation interconnects at the Company's distribution system. Public Service adds the savings to the avoided capacity cost, which increases the avoided capacity costs.

111. *Vote Solar's method for calculating avoided capacity costs* is set out in Hearing Exhibit No. 14 at 13:4-18:10. Importantly, Vote Solar proposes to use this method for the two PV categories only; it does not address the Wind, Hydro, and Other categories.

112. The Vote Solar method begins with the Company's 13-Step method and makes changes in some of the steps. For ease of comparison, the following description of the Vote Solar proposal uses the step designation from the PSCo method and identifies the changes advocated by Vote Solar. Briefly, the Vote Solar method is:

In Step 1, Vote Solar begins with the full avoided costs of one CT as the base number.

In Step 3, Vote Solar adds PSCo's planning reserve margin to the base number and adjusts the result by the Company's escalation factor.

In Step 7, Vote Solar does not use the Surplus Capacity Credit; Vote Solar skips this step.

In Step 8, Vote Solar uses, for each year, the avoided capacity costs derived in Steps 1 through 6.

In Step 11, Vote Solar determines the PV technology-specific monthly avoided capacity cost rate in \$/kW-Mo. To do so, Vote Solar uses the GLCC values from PSCo's 2009 Solar ELCC study.

Other Avoided Costs: In addition to the avoided capacity costs included by Public Service, Vote Solar includes avoided Transmission and Distribution (T&D) costs and avoided environmental costs in its calculation of avoided capacity costs.

113. *WCPC's method for calculating avoided capacity costs* is a complete substitute for (*i.e.*, does not begin with and does not make adjustments to) the Company's proposed method. Importantly, WCPC proposes to use its method for the Hydro category only; WCPC

does not address the Wind, PV, and Other categories. Briefly, the WCPC method is: use the capacity-related costs of PSCo's existing hydroelectric facilities³³ as the avoided capacity costs.

1. Positions of the Parties.

a. Public Service Company.

114. As support for its proposed method, Public Service relies on this basic premise: avoided capacity costs are determined based on the next -- or future -- resource addition necessary to meet load requirements. The PSCo 2011 ERP addressed precisely this issue. Thus, the correct method for determining avoided capacity costs is to begin with -- and to draw heavily from -- the Commission-approved modeling assumptions and factors used in the evaluation of the bids received in the 2013 All-Source Solicitation conducted in Phase II of the 2011 ERP.

115. As support for specific steps in its proposed method, the Company states:

Step 1: The capacity costs are based on a generic CT because: (a) as determined in the Commission-approved 2011 ERP, the generic CT is the form of generation that Public Service will need to acquire next and, thus, is the best representation of the generation that Public Service may avoid or defer by the purchase of QF capacity; (b) in the 2013 All-Source Solicitation, CTs met most of the Company's capacity needs for the Resource Acquisition Period (RAP) of October 2014 through October 2018; (c) after October 2018, based on the 2011 ERP, the Company's need for capacity remains a need for peaking capacity, which is a need that the CT fills; and (d) in the 2011 ERP, the Company used a two CT generic facility as an assumption of the market price for new generation capacity.

Step 2: The nameplate rating adjustment is necessary because summer usage drives capacity additions on PSCo's summer-peaking electric system. The Company needs to know the capacity of the two CTs in the summer.

Step 4: The subtraction of the costs of ancillary services is appropriate because small non-dispatchable QF technologies (such as those discussed in this Proceeding) cannot provide those ancillary services. Thus, if small QF capacity displaces the addition of a CT, Public Service would not avoid the costs of the ancillary services.

³³ The PSCo-owned hydroelectric facilities on which WCPC relies are: Ames, Salida, and Tacoma. These are run-of-the-river facilities. The Company also owns another hydra facility: Cabin Creek, which is a pumped storage facility.

Step 7 and Step 8: The Company does not need any new capacity in the RAP (2014-2018). As a result, during this period the Company neither avoids nor defers a generation capacity addition by acquiring capacity from small QFs. Nonetheless, resources such as solar wind, and hydro (even if intermittent) “can help meet peak system loads based on the nature of their generation resources” (Hearing Exhibit No. 9 at 14:22-15:1) and thus have some avoided capacity value. The use of the Surplus Capacity Credit to determine avoided capacity costs is appropriate because it recognizes that value. In addition, this treatment is consistent with the Company’s use of Surplus Capacity Credit values in its Commission-approved evaluation of resources bid into the 2013 All-Source Solicitation. Decision No. C13-0094 at ¶¶ 212-15.³⁴

Step 9: Public Service views a ten-year period as a reasonable assumption for the length of time that a small QF will provide power to the Company. As a result, the Company constructed its method using an assumed ten-year period. Levelizing the ten-year stream of capacity values using the Company’s WACC both levelizes and, to some degree, front-end loads the Company’s avoided capacity costs over the next ten year period.

Step 11 and Step 12: PSCo proposes different avoided capacity payment rates by QF technology based on how each QF technology will interface with PSCo’s electric system. 18 CFR § 292.304(c)(3)(ii). The Company will not have dispatch control over QF facilities on this tariff. As a result, it needs to estimate the contribution that each technology makes to meeting the peak load. Standard methods for making this determination are Effective Load Carrying Capability (ELCC) studies and Load Duration studies.³⁵ For PV and wind, the Company uses its most recent ELCC studies, which are the studies approved by the Commission for use in evaluating the resources selected from responses to the Company’s 2013 All-Source Solicitation. For hydroelectric, the Company has no ELCC study. As a result, the Company performed a hydro Load Duration Study for this Proceeding.

116. In response to Vote Solar’s and WCPC’s criticisms of the Company’s method and as its reasons for opposing the Vote Solar method, the Company states:

a. With respect to the use of a two CT project: (1) in the 2011 ERP, PSCo used a two CT generic facility; (2) the bids PSCo received in response to the 2013 All-Source Solicitation were lower than the assumed average cost of the generic two CT generic facility; (3) Vote Solar witness Gilliam distorted (that is, increased) the avoided capacity costs by using a CT cost assumption from 2009; and (4) the Company’s usual practice is to have a two CT project.

³⁴ This Decision was issued on January 24, 2013 in the 2011 ERP.

³⁵ These are the studies used by Public Service to determine the technology-specific GCC.

b. With respect to the use of the Surplus Capacity Credit: (1) 18 CFR § 292.304(e) contains the factors that affect the rates for purchases from QFs; (2) 18 CFR § 292.304(e)(3) provides that, in determining avoided costs, one should be taken into consideration, to the extent practicable, “the relationship of the availability of energy or capacity from the [QF] as derived in [18 CFR § 292.304(e)(2)], to the ability of the electric utility to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use”; (3) as that FERC PURPA Rule makes clear, one determines avoided costs in light of the utility’s individual loads and resources balance; (4) in the years when it has adequate generation capacity to serve projected native load and planning reserves, the Company does not avoid adding generation by buying capacity from QFs; (5) through at least October 2018, the Company has no need for capacity; (6) in Order No. 69, FERC suggests that utilities with excess capacity may avoid capacity rates when offered QF power; and (7) even though it does not need capacity until at least October 2018, Public Service incorporates the Surplus Capacity Credit, and thus pays for capacity in years in which it does not need capacity, in order to recognize that QF capacity has some value.

c. With respect to the use of 2012 Effective Load Carrying Capacity (ELCC) study: (1) the 2009 Solar ELCC study is out-dated and has been superseded by the 2012 ELCC study; (2) the Company no longer supports the 2009 Solar ELCC Study; and (3) the PV and wind ELCC values from the 2012 study were among the evaluation assumptions approved by the Commission for evaluation of resource acquisitions after the 2013 All-Source Solicitation.

d. With respect to the Load Duration Study used to determine the GCC for Hydro: While not as rigorous as an ELCC study, the Load Duration Study method used by Public Service to determine the GCC for the Hydro category is an accepted method. Public Service had no ELCC study for hydroelectric.

e. With respect to the Company’s not adding avoided T&D costs as an element of its avoided costs: (1) FERC has addressed the issue of additions to avoided costs and said: “if the [state commission] bases the avoided cost ‘add’ or ‘bonus’ on an actual determination of the expected costs of upgrades to the distribution or transmission system that the QFs will permit the purchasing utility to avoid, such an ‘add’ or ‘bonus’ would constitute an actual avoided cost determination and would be consistent with PURPA and” FERC PURPA Rules (Hearing Exhibit No. 14 at Exhibit RG-6³⁶ at ¶ 31); (2) in this Proceeding, there has been no showing that the Company will have any actual avoided transmission capacity additions or any actual avoided distribution capacity additions as a result of purchases from small QFs; (3) the PSCo method takes into account estimated

³⁶ This is the Order Granting Clarification and Dismissing Rehearing issued in *California Public Utilities, Southern California Edison Company, Pacific Gas and Electric Company, San Diego Gas & Electric Company*, 43 FERC ¶ 61,059 (Oct. 21, 2010) (*California Public Utilities Commission*).

line loss savings; and (4) as a result, no adder for assertedly avoided T&D costs is warranted.

117. With respect to the WCPC proposed method for determination of avoided capacity costs, the Company disagrees with the proposed method and asserts:

a. FERC and the Commission have declared the avoidance or deferral of new generation capacity to be the standard for setting avoided capacity cost rates for QFs.

b. Pursuant to 18 CFR § 292.304(a)(2) and Rule 4 CCR 723-3-3902(e), Public Service must purchase energy and capacity from QFs, but it cannot pay more than its avoided energy costs and its avoided capacity costs; and both Rules define avoided costs as incremental costs, which means the next facility needed to meet an increase in (*i.e.*, future) demand.

c. No FERC Rule defines avoided costs in terms of either the average costs of utility generation or the embedded costs of existing units, which are the costs that WCPC witness Jacobson used in his analysis. In fact, in Order No. 69, FERC specifically stated that average system costs are not to be used to determine avoided costs. Hearing Exhibit No. 17 at Exhibit GLC-01 at 3.

d. Although the capacity-related costs of the PSCo hydro facilities factor into Public Service's average embedded system cost, the PSCo-owned hydroelectric facilities used by WCPC witness Jacobson do not reflect the Company's avoided cost of *new* capacity. As a result, the method used by WCPC witness Jacobson is contrary to PURPA, to FERC PURPA Rules, and to the PUC PURPA Rules.

118. With respect to the WCPC argument that PSCo must pay small hydroelectric QFs an avoided cost rate based on the cost of PSCo's own hydroelectric facilities because to do otherwise discriminates against those QFs, Public Service disagrees and asserts:

a. If an avoided cost rate is correctly determined (*i.e.*, is based on the utility's avoided costs and not its average system costs), then, by definition, the rate is non-discriminatory to QFs and is just and reasonable to the utility's other customers.

b. The FERC PURPA Rule provisions addressing non-discrimination must be read in light of this overarching principle: nothing in PURPA or in the FERC PURPA Rules requires an electric utility to pay more than its avoided costs for purchases from QFs.

c. The PUC PURPA Rules contain no non-discrimination language.

b. Staff of the Commission.

119. Staff supports the Company's approach to developing standard avoided capacity cost rates for the small QFs.

120. In Staff's opinion, Public Service is unlikely to avoid any capacity costs when purchasing from a single small QF or when purchasing from many small QFs. In addition, Staff notes that the Company proposes to offer capacity payments in years where it is expected to have surplus capacity. Staff believes, however, that FERC intended some capacity value to be attributed to the small QFs. In addition, Staff notes that the Commission accepted the use of a Surplus Capacity Credit in the 2011 ERP in order to assign some value to capacity acquired in excess of the Company's capacity needs. Thus, Staff finds the use of the Surplus Capacity Credit to be acceptable.

121. With respect to levelizing costs over the ten-year planning horizon, Staff recognizes that the anticipated and understood effect of levelizing costs over ten years is: the capacity payment rate may exceed PSCo's avoided costs in years in which the Company has no capacity needs and may understate PSCo's avoided costs in other years. Staff nonetheless supports the Company's method because: (a) it provides certainty to the QFs; and (b) it minimizes the complexity and administrative costs of developing specific avoided capacity costs for every year going forward.

122. Staff is satisfied that the technology-specific GCCs derived by the Company are based on the most recent and best available studies and are consistent with those relied on by the Commission in the 2011 ERP. Staff supports updating the GCC values over time should the Company develop, and the Commission adopt, new studies or new values.

123. Thus, despite reservations that the PSCo method could be viewed as generous, Staff supports the Company's method for determining avoided capacity costs.

c. The Vote Solar Initiative.

124. In support of its proposed method, Vote Solar states:

a. The Vote Solar method uses the full avoided costs of one CT, which includes fixed O&M expenses and other adjustments because: (1) this is the method used by Public Service in Proceeding No. 09AL-299E, its last electric rate case; and (2) PSCo has not justified its proposal to use a two CT project. PSCo observed that Vote Solar witness Gilliam used an outdated CT cost estimate. Vote Solar agrees that an updated number that includes fixed O&M and other adjustments is appropriate.

b. The Vote Solar method adds the Company's planning reserve margin to the base figure and adjusts the total by PSCo's escalating factor. This is appropriate because: (1) whether PSCo is short or long on capacity, the addition of small QFs reduces the Company's cost to meet its reserve margin requirements; (2) small QFs incrementally defer the need for new generation, reduce the native load on which reserve margin is based, and thus contribute to system reliability; and (3) the small QFs' contribution to system reliability is not changed by the fact that, at some point, the Company may have excess unused capacity.

c. The Vote Solar method relies on the 2009 Solar ELCC study for its GCC values. Vote Solar: (1) states that, due to the flaws in the 2012 Solar ELCC study, the 2009 study is preferable and more reliable; (2) acknowledges that the 2009 study is a placeholder, and (3) recommends that the 2009 study be used only until a better analysis is available. With respect to assessing the GCC of small solar QFs going forward, Vote Solar recommends that Public Service incorporate updated information (and methodological approaches) from pending and/or future proceedings. In the meantime, Vote Solar recommends using the 2009 study.

d. The Vote Solar method includes both the T&D capacity costs and the environmental costs that PSCo avoids by purchasing power from small QFs. This is appropriate because: (1) PSCo understates its avoided capacity costs by not including all avoided T&D costs; and (2) the cumulative effect of deploying small QFs on the PSCo system is functionally equivalent to reducing load on the transmission grid and on individual distribution circuits.

125. In response to the criticisms of its avoided T&D assumptions and inputs, Vote Solar states: (a) in Order No. 69, FERC defined "[c]apacity costs [as] the costs associated with providing the capability to *deliver* energy" (Hearing Exhibit No. 17 at Exhibit GLC-01 at 3

(emphasis supplied)); (b) in *California Public Utilities Commission*, FERC clarified that an avoided capacity cost rate can include avoided T&D costs provided the benefits are based on “an actual determination of the expected costs of upgrades to the distribution or transmission system that the QFs will permit the purchasing utility to avoid” (Hearing Exhibit No. 14 at Exhibit RG-6 at 15); (c) when PSCo and Staff assert that, given the size of the small QFs, purchases from small QFs are unlikely to allow the Company to avoid certain T&D costs, they misapply the FERC PURPA Rules because 18 CFR § 292.304(e)(2)(vi) provides that, to the extent practicable, the individual and the *aggregate* value of QF energy and capacity available on the system must be considered when determining the avoided costs; and (d) PSCo limits its avoided transmission capital cost estimate to avoided interconnection costs, which is insufficient, while Vote Solar includes a more complete consideration and evaluation of the avoided T&D costs.

126. Vote Solar asserts that the Company’s proposed method contains flaws that, individually and collectively, inappropriately reduce the avoided capacity costs. Vote Solar’s criticisms of the Company’s proposed method are:

a. With respect to the use of a two CT project: The Company’s proposed method is unreasonable because: (1) it averages the costs of two CTs although it is the first CT that is avoided by purchases from QFs, and thus avoided capacity costs should be based on the cost of that unit alone; and (2) the avoided costs rest on the assumption that PSCo will construct future CTs in pairs, but PSCo witness Scholl testified at the hearing that “it is possible to have a single combustion turbine unit on the company’s system” and for the two units to have different in service dates (April 22 tr. at 213:2-5, 214:13-18) and, in fact, PSCo’s Valmont Unit 6 “is a single CT” (*id.* at 213:1).

b. With respect to applying an Economic Carrying Charge (ECC) to the capital costs of the generic two CT project: The Company’s proposed method unreasonably reduces the avoided capacity costs because, as shown in Hearing Exhibit No. 41 at 2-226, the ECC does not represent the full set of costs associated with avoided capital costs. In its last electric rate case, PSCo used Levelized Carrying Cost (LCC) to estimate the full revenue requirement impact of a CT. Because it contains the full set of avoided capital costs, the Company should use the LCC to determine the full avoided costs of a generic CT.

c. With respect to the use of the Surplus Capacity Credit in 2014-2018: The Company's use of the Surplus Capacity Credit is unreasonable because: (1) in compliance with the 2011 ERP, PSCo is implementing plans to add capacity before October 2018; and (2) PSCo fails adequately to account for the ability of small QFs to defer additional generation units.

d. With respect to the use of the 2012 ELCC study (rather than the 2009 Solar ELCC study) to derive the Generating Capacity Credit for small solar: The Company's use of the 2012 ELCC study to derive the GCC for PV-Tracking and for PV-Fixed is unreasonable because: (1) the 2012 ELCC study contains a limited data set for determining the capacity value of solar, which results in improperly reduced avoided capacity costs; (2) the Commission has examined, and approved the use of, the 2009 Solar ELCC study in the context of a contested proceeding but has not examined and approved the use of the 2012 ELCC study in a similar process; and (3) because the Commission soon may examine the 2012 ELCC study in either the current net metering case (Proceeding No. 14M-0235E) or a follow-on proceeding, there is general agreement that, to the extent the solar ELCC study is updated, PSCo should use the updated solar capacity value in deriving capacity payment rates for small PV QFs.

d. Western Colorado Power Company.

127. In support of its proposed method, WCPC states:

a. The Commission has both the authority and the duty to require PSCo to set a truly technology-specific rate for small hydroelectric QFs. A correctly done technology-specific avoided cost rate for small hydroelectric QFs should take into account, and should be based on, the cost of PSCo's existing hydroelectric facilities because, as pertinent here, PURPA avoided costs include the "incremental costs to a utility of ... capacity ... *which, but for the purchase from the [QF] or [QFs], such utility would generate itself or purchase from another source*" (16 U.S.C. § 824a-3(d) (Hearing Exhibit No. 19) (emphasis supplied)).

b. Because WCPC witness Jacobson has been precluded from proposing a specific avoided capacity payment rate in this Proceeding,³⁷ the record does not contain the true total delivered costs avoided by QF generation. However, taking WCPC witness Jacobson's proposed energy rate as including *both* avoided energy *and* capacity costs (which it does not because capital costs are not included), that rate clearly establishes that the Company's proposed method results in rates that are too low.

c. The rates developed using the Company's method are a small fraction of the rate PSCo pays itself. This is compelling evidence of PSCo's discriminatory treatment of small hydroelectric QFs.

³⁷ With respect to this assertion, see ¶ 106, *supra*.

d. If the Commission authorizes a method that results in below-market rates (*i.e.*, rates that are less than the costs of PSCo's existing hydroelectric facilities) for QFs, competition is stifled to the detriment of Colorado consumers because they will not receive the benefits of a more efficient system, the best rates, and meaningful options for renewable and alternative power sources.

128. If the Commission does not adopt the WCPC proposed method, then WCPC supports the proposed Vote Solar method with one modification: until the Company has a hydroelectric ELCC study that has been reviewed and approved, no GCC should be applied to hydroelectric QFs. Thus, for hydroelectric facilities, Step 11 and Step 12 of Exhibit Revised DRB-2 in Hearing Exhibit No. 6 should be removed from the avoided capacity rate method.

129. In response to the criticisms of its avoided capacity cost method, WCPC asserts that, contrary to the arguments of both PSCo and Staff, the costs of PSCo's own hydroelectric plants are relevant to the standard QF rate for avoided capacity because 16 U.S.C. § 824a-3(d) (Hearing Exhibit 19) mandates that avoided costs incorporate the actual costs of the utility's *own generation* which it would have operated but for the QF power.

130. WCPC asserts that the Company's proposed method contains flaws that, individually and collectively, reduce the avoided capacity costs. In the main, WCPC's criticisms of the Company's proposed method parallel those of Vote Solar. WCPC makes these additional points:

a. In WCPC's opinion, the implementation of PURPA in Colorado -- particularly with respect to small hydroelectric facilities -- has been a failure. Because the Company's proposed avoided cost payment rates for small QFs are significantly lower than the current tariffed standard rates, because PSCo's current tariffed standard rates are substantially below market rates, and because the Company uses the small QF tariffed standard rates as the basis for its negotiations with larger QFs,³⁸ WCPC asserts that adoption of the Company's

³⁸ PSCo witness Scott Brockett admitted that "the energy rate is applied to other power producers that have contracts with [PSCo]." April 21 tr. at 78:8-9.

method will discourage development of QF hydroelectric energy or capacity in Colorado. Thus, WCPC opposes the Company's proposed method.

b. With respect to the use of a two CT project: The Company's proposed method is unreasonable because: (1) PURPA examines the utility's need for incremental capacity; (2) incremental refers to a small or minute increase in quantity; and (3) thus, incremental capacity refers to the next unit -- not the next two units -- added, citing Decision No. C82-1637³⁹ at 6. In addition, PSCo witness Scholl testified (April 23 tr. at 27:13-15) that the Company received bids for single CTs in response to its 2013 All-Source Solicitation.

c. With respect to the use of the Surplus Capacity Credit in 2014-2018: The Company's use of the Surplus Capacity Credit is unreasonable because: (1) 18 CFR § 292.303(a) requires a utility to purchase, in accordance with 18 CFR § 292.304, any capacity available from a QF; and (2) other states have interpreted this FERC PURPA Rule to require a utility to pay for a QF's capacity even in periods when the utility has sufficient or surplus capacity (*see, e.g.,* Hearing Exhibit No. 11 at Exhibit ERJ-18 (North Carolina Utilities Commission Order finding QF entitled to capacity payment despite utility's argument that no additional capacity was needed)).

d. With respect to the use of the GCC for hydroelectric: The Company's use of the GCC is unreasonable because: (1) although PSCo asserts that GCC, "whether it is calculated through an ELCC method or a load duration method, [is] the best indicator of the value of a specific generation type to ... reliably meet load" (April 22 tr. at 263:9-13) and although the GCC for hydro is higher than the GCC for PV-Fixed and PV-Tracking, the overall avoided capacity cost payment rate proposed for hydro is significantly lower than the overall avoided capacity cost payment rate proposed for both PV categories; (2) for the new hydro category, PSCo derived an annual capacity factor from the monthly capacity factors of 15, 16, or 17 hydro generators by "calculat[ing] a capacity factor for each generator, and then tak[ing] the average of those capacity factors" (April 22 tr. at 260:13-15) irrespective of the size of each facility (*id.* at 259:24-260:15); (3) the method used to derive the GCC for hydro differs significantly from an ELCC study, which PSCo witness Scholl testified is the preferred method because ELCC "rel[ies] on probability metrics" (Hearing Exhibit No. 9 at 16:5-12); and (4) the GCC for hydro and Other is based entirely on hypothetical capacity factors of system facilities.

e. With respect to the use of the GCC in general: The Company's use is unreasonable because the method is fundamentally flawed because: (1) PSCo initially calculated a GCC of 50 percent for the Other category based only on data from 16 non-Company owned hydroelectric generators in the PSCo system; when PSCo added a separate category for Hydro QFs, it did not modify

³⁹ This Decision was issued on October 14, 1982 in Case No. 6113, *Energenics Systems, Inc. v. Public Service Company of Colorado (Energenics Systems)*. The Colorado Supreme Court affirmed Decision No. C82-1637 in *Public Service Company of Colorado v. Public Utilities Commission*, 687 P.2d 968 (1984).

the derivation of the GCC for the Other category; and, thus, the GCC for Other category is essentially based on hydroelectric capacity factors; and (2) PSCo witness Scholl testified that, “based on how the dynamics of the calculation works, when you assume a 50 percent GCC and a 50 percent assumed energy capacity factor, those components essentially wash out, and it would be as if you are giving the Other category 100 percent GCC, assuming 100 percent capacity factor” (April 22 tr. at 261: 6-13).

2. Discussion and Conclusion.

131. As recognized by FERC in Order No. 69, “the translation of the principle of avoided capacity costs from theory into practice is an extremely difficult exercise, and is one which, by definition, is based on *estimation* and *forecasting of future occurrences*.” Hearing Exhibit No. 17 at GLC-01 at 13(emphasis supplied). This Proceeding confirms that the translation from theory to practice is indeed a difficult exercise. At the end of this difficult exercise, however, the ALJ finds that the record does not support adoption of any of the proffered methods for determining avoided capacity costs.

132. The relevant sections of PURPA, the relevant and applicable FERC PURPA Rules, and the relevant and applicable PUC PURPA Rules, as well as Order No. 69 and relevant Commission Decisions, are discussed in detail above. The ALJ relies on that discussion in ruling on the method for determining avoided capacity costs.

133. Turning first to the *Public Service method*, the ALJ finds much that is attractive about this method.

134. First, the PSCo method: (a) is forward-looking (*i.e.*, based on the costs of the next generation unit that the Company expects to acquire); (b) attempts to identify, to take into account, and to assign a value to all capacity-related costs that PSCo can avoid by purchasing capacity from QFs; and (c) attempts to identify, to take into account, and to assign a value to the capacity-related costs that PSCo cannot avoid by purchasing capacity from QFs. As all Parties in

this Proceeding agree,⁴⁰ a method that is forward-looking is the most fundamental prerequisite for determining avoided cost. Thus, the PSCo method complies with the requirements for determination of avoided cost and is reasonably consistent with the principles of PURPA, FERC PURPA Rules, and PUC PURPA Rules.

135. Second, the PSCo method develops standard capacity payment rates that are generation-technology specific. This is a reasonable refinement, is an improvement over the current tariff, and ties the capacity payment more closely to the contribution each type of technology generation makes to PSCo's ability to avoid or to defer capacity additions.

136. Third, the PSCo method is based on, and takes into account at least some of, the capacity cost-related elements or factors used by the Company to evaluate the bids received in response to the 2013 All-Source Solicitation. Given that the Commission considered the application of these elements or factors in detail in the 2011 ERP, it is appropriate and reasonable to incorporate the same cost elements or factors into the method used to determine the standard avoided capacity cost rates.⁴¹ This helps to assure that there is consistent treatment (or determination) of avoided capacity costs across all QFs that seek to sell capacity to Public Service.⁴²

137. Fourth, to a large degree, the steps in the PSCo method are reasonable and are necessary to determine the Company's full avoided capacity costs.

138. Fifth and finally, the ALJ finds persuasive the arguments of the parties that advocate the use of the Company's general method, even if they disagree about particular steps.

⁴⁰ As discussed *infra*, although WCPC agrees that avoided cost is always forward-looking, the WCPC's avoided capacity cost method runs afoul of this principle.

⁴¹ To be clear, this includes the use of the Surplus Capacity Credit in the years 2014-2018.

⁴² This assures that there is no discriminatory treatment among or between QFs based on their size.

139. Turning next to the *Vote Solar method*, the ALJ observes that, as discussed above, Vote Solar begins the PSCo method and makes changes to particular steps. Thus, the general discussion of the PSCo method also applies to the Vote Solar method.

140. Turning finally to the *WCPC method*, the ALJ finds that this method, which uses the capacity costs of PSCo's existing hydroelectric units, is unacceptable. It is contrary to the most basic precept of PURPA because it is *not* forward-looking.

141. On at least two occasions the Commission has addressed proposed avoided capacity cost methods that relied on current or embedded costs. In each instance, the Commission rejected the proposed method.

142. In Decision No. C82-1637, the Commission considered Public Service's proposal to determine the capacity payment in a QF contract using the "weighted average of the capacity payments made by the company for purchased power and capacity costs for [PSCo's] most recently installed coal-fired generation" (Decision No. C82-1637 at 2-3). Relying on the reasoning underlying its then-proposed (and later adopted) PUC PURPA Rules, the Commission rejected Public Service's proposed method for determining avoided capacity costs because the then-proposed rules

contemplate[] that existing *electric utilities purchase power from [QFs] at a rate not to exceed long run marginal costs for each utility*. The proposed rules do not contemplate that an existing electrical utility may use *a costing methodology that averages in existing power plants already in service*, which plants could not be built today for the same cost incurred five or ten years ago. Such a cost methodology would not encourage [QFs].

Decision No. C82-1637 at 6(emphasis supplied). Based on the record in that case, the Commission ordered PSCo to base its capacity payments on future capacity purchases and on "Public Service's next proposed marginal plant[.]" *Id.*

143. In Decision No. C84-67, which was issued in an Advice Letter case, the Commission considered the Company's proposed method to calculate avoided capacity costs. Public Service proposed a method that used "a mixture of current costs for purchased power, escalated costs for portions of existing plant, as well as anticipated costs for a future plant (Pawnee II)." Decision No. C84-67 at 6. In that Decision, the Commission rejected that portion of the proposed method based on current purchased power. In doing so, the Commission stated:

The Intervenor correctly assert that this Commission has consistently rejected costs associated with current purchased power as reflecting future avoided costs; i.e., power purchased from other generating utilities *reflects plants currently constructed and in operation, not future avoided costs*. ... In any event, by definition, the utilization of purchased power costs to compute future avoided costs is improper.

Decision No. C84-0067 at 6 (emphasis supplied). Based on the record in that case, the Commission ordered PSCo to base its capacity payments on Pawnee II and related capacity costs because

[t]he costs associated with Pawnee II represent the costs for [PSCo's] next plant, whatever the name [is] attached to it. The evidence in this matter establishes that the costs associated with Pawnee II do in fact represent [PSCo's] future avoided costs for at least a decade. ... [PSCo's] use of escalated Pawnee I costs along with the costs associated with Pawnee II, to include a component for transmission ..., does reflect [the Company's] *future avoided [capacity] costs* as they may reasonably be calculated.

Id. at 7 (underlining in original; italics supplied).

144. These Decisions are consistent with the definition of avoided costs in PURPA, the FERC PURPA Rules, and the PUC PURPA Rules. In addition, they are consistent with FERC's statement that "[w]ith respect to capacity, if a purchase from a qualifying facility permits the utility to avoid the addition of new capacity, then the avoided cost of the new capacity and not the average embedded system cost of capacity should be used" (Hearing Exhibit No. 17 at Exhibit GLC-01 at 3). Finally, the Decisions are persuasive authority for the proposition that the

Commission will not approve a method to determine avoided capacity costs that includes power plants now in service because that method does not reflect the utility's future costs that the utility can avoid by purchasing QF capacity.

145. The ALJ also finds persuasive the arguments in opposition to the WCPC method presented by Public Service, Staff, and Vote Solar.

146. Because the WCPC method relies exclusively on the actual costs associated with the Company's existing hydroelectric facilities, the ALJ finds that the WCPC method is contrary to PURPA, the FERC PURPA Rules, the PUC PURPA Rules, and FERC and Commission decisions. The ALJ will not select the WCPC method.

147. For the foregoing reasons, the ALJ finds that the PSCo method comes closest to an appropriate method for determining avoided capacity costs. The ALJ will not select this method, however, because the ALJ agrees with the Intervenors that the method is flawed in at least the following ways: (a) the use of the two CT project has not been shown to be appropriate; (b) avoided transmission and distribution costs have not been identified and included; and (c) there are 2011 ERP and 2013 All-Source Solicitation capacity cost factors or elements that appear not to be included in the PSCo method, and the failure to include them is not explained.

148. Because the ALJ does not select, in this Proceeding, a method for determining avoided capacity costs, the method must be determined in another proceeding. The ALJ will order Public Service to file an application seeking Commission approval of a method to determine avoided capacity costs. The ALJ will order the Company to base its proposed method on this Decision.

C. Energy Payment Rate Component of Standard Rate.

149. Public Service, Vote Solar, and WCPC each made a proposal with respect to calculation of avoided energy costs which, in turn, results in the energy payment rate component of the standard rate. Although there is testimony about the actual standard rates that may be derived using one or more of the proposed methods, this Decision focuses only on the methods. Each proposed method is described below.

150. *Public Service's method for calculating avoided energy cost rates* is set out in the four-step method shown in Hearing Exhibit No. 6 at Revised Exhibit DRB-1. Relying on 18 CFR § 292.304(c)(3)(ii), PSCo proposes different avoided energy payment rates by QF technology based upon how each QF technology would interface with PSCo's electric system.

151. The Company's proposed method is:

a. In Step 1, the Company queries its Cost Calculator model database to determine in each hour, for the most recent historical 12-month period for which corrected data are available, the marginal energy cost that would have been saved for the Public Service system to accommodate 10 MW of QF energy. The cost components in Cost Calculator include the costs for each hour of fuel, variable O&M, and tolling fees. By multiplying the system's hourly marginal energy costs from Cost Calculator times the hourly generation profile of each technology type (*i.e.*, PV-Fixed, PV-Tracking, Wind, Hydro and Other) and then dividing by the sum of the annual generation, the Company generation-weights (for each type of small QF technology) the hourly decremental costs from Cost Calculator.

b. In Step 2, the Company derives, for each technology type, the costs that the Company will incur to integrate each form of intermittent technology into the PSCo system.

c. In Step 3, the Company subtracts from the generation-weighted decremental energy costs derived in Step 1 the integration costs derived in Step 2. The result is the total energy cost (\$/MWh) for each technology.

d. In Step 4, the Company determines the line loss savings expected and adds the savings to the avoided energy costs in Step 3.

152. *Vote Solar's method for calculating avoided energy cost rates* is set out in Hearing Exhibit No. 14 at 12:3-13:3. Importantly, this proposed method is for the two PV categories only; it does not address the Wind, Hydro, and Other categories. Briefly, the proposed Vote Solar method is: a forward-looking calculation based on a single CT unit with an assumed heat rate of 12,769 Btu/kWh and an assumed 50 percent loading factor and using PSCo's natural gas forecasts levelized over a ten-year period.

153. *WCPC's method for calculating avoided energy cost rates* is for the Hydro category only; it does not address the Wind, PV, and Other categories. Briefly, the proposed WCPC method is to pay small hydroelectric QFs 75 percent of the average energy cost of PSCo's own hydroelectric facilities.

154. If the Commission does not adopt WCPC's method, then WCPC supports using the Vote Solar method with this adjustment: to be consistent with the approved method in the 2011 ERP and to account fully for variable O&M, WCPC supports adding to each year's annual cost the net present value of Strategist's variable O&M value of \$ 10.43/MWh.

1. Positions of the Parties.

a. Public Service Company.

155. As support for its proposed method, the Company states:

a. The current energy payment method has been in place since the 1980s, when the Company's next planned generation plant was Pawnee II. Thus, the current avoided energy cost rate for QFs is based on the assumption that the next planned generation addition is a base-load coal facility. In Public Service's opinion, this method is outdated because PSCo no longer plans to construct Pawnee II or to acquire any other new base-load coal facility. Thus, a new to determine avoided energy costs is necessary.

b. The PUC FERC Rule that defines avoided costs states that avoided costs can be marginal costs, which can be either incremental or decremental costs, depending upon whether cost adders or cost savings are under consideration.

c. Public Service's method for calculating avoided energy costs begins with and uses the most accurate tool -- Cost Calculator -- that PSCo has available for capturing the actual energy costs that the Company would have avoided had the Company purchased energy from different forms of intermittent small QF technologies during a recent 12-month historical period. When Public Service makes short-term off-system sales, the most expensive hourly dispatchable energy costs are assigned to these sales are assigned. As a result, the marginal energy costs used in Step 1 of the PSCo method are the marginal energy costs of the energy that was used to serve Public Service's on-system customers after the off-system sales were assigned the more expensive energy. This treatment is consistent with the Company's Commission-approved Trading Business Rules. Hearing Exhibit No. 7 at Exhibit NJD-1.

d. The QF generation technologies have different expected seasonal and daily generation patterns. In addition, the small QFs generally are not dispatchable. As a result, the generation-weighting in Step 1 serves the important functions of predicting when each technology is likely to deliver energy to the Public Service system and of predicting what energy costs would be avoided when the energy is delivered.

e. The QF technologies are intermittent resources. As a result, the Company will incur -- not avoid -- variable costs to integrate those resources into the PSCo system. Thus, Step 2 is necessary. The variable costs used in Step 2 were developed and submitted in the 2011 ERP and were used in the 2013 All-Source Solicitation.

f. In Step 4, the Company adds avoided line losses. This is consistent with the proposed PSCo method for deriving the capacity payment rate component.

156. In response to criticisms of the Company's method and its assumptions and inputs, the Company states:

a. With respect to the use of Cost Calculator to determine avoided energy costs: (1) Cost Calculator is the business tool used by the Company to calculate the marginal costs of its energy production for many purposes, and it creates a database that can be queried to determine the incremental costs or decremental costs that were incurred on the Public Service system by hour in any historic period; (2) Cost Calculator is the best tool that the Company has to measure the energy costs that Public Service would have avoided in any hour, had the Company not used the last dispatched block of energy to meet system load; and (3) there should be no dispute that, if the use of recent historic marginal energy cost data is appropriate to determine avoided energy costs, Cost Calculator is the best source of that information.

b. With respect to the units on the margin in the study period: For most of the hours in the study period (*i.e.*, September 1, 2011 to August 30,

2012), PSCo's natural gas plants were not on the margin. Notwithstanding this result, the Company supports the use of Cost Calculator because Cost Calculator captures the generation that the Company had on the margin under economic dispatch⁴³ and, in doing so, takes into consideration generation unit constraints.

c. With respect to the number of hours that marginal energy costs were lower than average energy cost of production in the study period: (1) fossil-fueled generators become more efficient as the level at which they are dispatched increases; (2) as a result, the incremental cost of serving the next block of MWh from the generator is likely less than the average cost of serving all the MWh being produced by the generator; (3) under economic dispatch, PSCo's system operators look to determine the unit that can most economically serve the next block of energy (*i.e.*, the unit with the lowest incremental cost for serving that energy); and (4) the incremental energy cost could very well be less than the average energy cost of that unit at its level of dispatch.

d. With respect to the issue of whether Cost Calculator has the appropriate variable O&M costs: (1) the issue arises because the Cost Calculator data provided to the intervenors showed variable O&M costs that are lower than the variable O&M costs that PSCo assumed in the Strategist modeling for the 2011 ERP; (2) at all times and as required by the Trading Business Rules, Cost Calculator includes PSCo's most recent (*i.e.*, daily or hourly) estimates of variable O&M costs; (3) Strategist contains variable O&M expense for long-term resource planning decision analyses; (4) the Company does not use Strategist to determine the hourly marginal variable O&M cost; and (5) thus, the two variable O&M cost values are not comparable.

e. With respect to the issue of whether Cost Calculator properly reflects unit start costs: (1) when units need to be started to make an off-system sale, Cost Calculator assigns unit start costs to that sale; (2) PSCo rarely, if ever, starts a generation unit to serve the last 10 MW or last 1 MW increment of system load; (3) in the normal course and to be ready for variations in native load, PSCo system operators would have started the units needed for that hour and, in accordance with economic dispatch, would dispatch them in order of the next lowest incremental cost unit; and (4) as a result, start costs for system load would generally not factor into any decremental block of Cost Calculator marginal energy costs.

b. Staff of the Commission.

157. Staff believes PSCo's proposed method is a reasonable approach to determining avoided energy costs.

⁴³ The Company's economic dispatch process is described in Hearing Exhibit No. 7 at Exhibit NJD-2.

158. Staff supports the use of Cost Calculator to determine the Company's historical hourly decremental energy costs for a 12-month period because:

a. Public Service applies the correct PURPA standards in trying to identify the incremental or marginal costs that it would avoid if it purchased energy from a QF. To focus on whether the Cost Calculator-determined cost is incremental or decremental is to focus on a semantic difference without a distinction because, regardless of the term used, Cost Calculator supplies the salient information as to the impact a purchase from a QF would have had on the economic dispatch of the Company's system and the associated costs. Cost Calculator is a reasonable tool to use both to determine the unit or units that PSCo would avoid operating when a QF is producing energy and to determine the savings (*i.e.*, avoided costs) that would accrue due to PSCo's ability to avoid operating units.

b. The Commission has accepted Cost Calculator as a tool used by PSCo to make its business decisions with respect to the value of potential short-term sales and the assignment of costs to such sales.

c. Cost Calculator reasonably captures the fuel and variable O&M costs associated with PSCo's dispatchable units and, therefore, provides useful hourly marginal cost data.

d. There is no evidence that the Company has manipulated, or will attempt to manipulate, the historical data in any manner to disadvantage QFs.

159. In addition, Staff supports the Company's proposed use of a weighted average of the historical hourly decremental cost data to develop energy rates specific to different categories of technologies. Staff finds appropriate the Company's reliance on historical data because: (a) the use of historical cost data to develop forward-looking rates is a long-accepted rate-making practice; and (b) the Company proposes to update the historical hourly cost data annually, which reduces the chance that the avoided cost energy rates will be based on stale data.

160. Finally, Staff supports Public Service's proposed method because it strikes a reasonable balance between accurately reflecting the energy costs a utility avoids by purchasing QF energy and avoiding excessive complexity or administrative costs (or both) when implementing the tariff.

161. Staff does not agree with the Vote Solar proposed method because Staff is unconvinced that this forward-looking approach accurately reflects the Company's expected avoided energy costs.

c. The Vote Solar Initiative.

162. As support for its proposed method, Vote Solar asserts:

a. The method is consistent with PSCo's ten-year forward method for deriving avoided capacity costs and is based on Company data. The Company used the forward-looking ten-year assumption because it determined that, "[f]or purposes of developing standard payment rates," a ten-year period is a "reasonable barometer" of how long a QF will continue to sell capacity to PSCo. April 21 tr. at 123:12-18; Hearing Exhibit No. 30. In addition, PSCo uses a forward-looking approach to rate setting and to resource planning.

b. The Company likely is in the best position to forecast its future natural gas prices. The gas price estimates used in the Vote Solar method come directly from PSCo's 2013 update to its 2011 ERP, in which it provided forecasts for a 40-year period. Hearing Exhibit No. 24 at 5at Appendix 1⁴⁴

c. To derive the avoided energy costs, the Vote Solar method selected the heat rate for a generic CT operating at 50 percent load from PSCo's 2011 ERP. Hearing Exhibit No. 41 at 2-221 at Table 2.8-1. Thus, the Vote Solar method uses the same data set that the Company uses to derive its two CT project cost assumptions in its avoided capacity cost calculation.

d. As shown in Hearing Exhibit No. 14 at 12at Table 2, Vote Solar witness Gilliam's calculations reflect an average discounted energy cost back to the first year, 2014. Although the avoided energy cost numbers in Table 2 are correct, to arrive at a levelized rate, the numbers would need to be adjusted by applying PSCo witness Scholl's levelization method. April 23 tr. at 127:17-25. Vote Solar recognizes and supports this adjustment to derive a ten-year fixed rate.

163. In response to criticisms of its method and its assumptions and inputs, Vote Solar states:

a. The Company opposed the Vote Solar method because the natural gas market is volatile. Thus, under the Vote Solar method, if natural gas price

⁴⁴ Hearing Exhibit No. 24 is the Company's Modeling Assumptions Update for the 2011 ERP. This document (which is dated April 16, 2013) updates the values for the modeling assumptions in Hearing Exhibit No. 41 (Section 2.8 of Volume II Technical Appendix to the 2011 ERP) and contains the "[u]pdated values, developed consistent with the 2011 ERP and the Commission's Decisions" in that Proceeding, to be used in the Phase II (2013) bid evaluation. Hearing Exhibit No. 24 at 1.

projections are too high, there is a risk that QFs would be overpaid. This criticism fails to recognize that, by their very nature, all forecasts bear a certain level of risk on both sides of the correct price point. As FERC observed in Order No. 69, “in the long run, overestimations and underestimations of avoided costs will balance out.” Hearing Exhibit No. 17 at Exhibit GLC-01 at 11 (internal quotation marks omitted).

b. The Company took issue with the heat rate cost and loading assumptions used in the Vote Solar method. The criticism is not supported by the record because: (1) the assumptions used PSCo data; (2) noPSCo CT had an average heat rate below 11,386 Btu/kWh during the past three years (Hearing Exhibit No. 42); and (3) during 2010-2013, most of the CTs listed in Hearing Exhibit No. 42 had average heat rates above the Vote Solar-recommended level of 12,769 Btu/kWh (*id.*).

c. Despite the Company’s disagreement, a 50 percent loading factor is a reasonable assumption for marginal costing purposes.

164. With respect to the Public Service proposed method for determining avoided energy costs, Vote Solar disagrees with the method and asserts:

a. FERC PURPA Rules require utilities to pay for QF energy purchases at the utilities’ full avoided energy costs (*i.e.*, incremental costs as stated in 18 CFR § 292.101(b)(6)); Cost Calculator “does not determine ... or produce the marginal energy costs, it produces a decremental energy cost” (April 23 tr. at 132:1-3); and, as a result, PSCo’s proposed method that derives avoided energy costs from decremental costs is inconsistent with PURPA.

b. Cost Calculator was not designed to set forward-looking avoided energy cost rates. Rather, the primary purpose of the model, and the purpose for which it was developed, is to assign costs to short-term sales. The issue presented in this Proceeding is whether the Cost Calculator model accurately calculates PSCo’s avoided energy costs in the context of PURPA. In this regard, Cost Calculator falls short because: (1) in terms of setting QF rates, the model calculates costs for a historic period as a proxy for future rates; and (2) for the period studied, the model’s results were inconsistent with the principle of economic dispatch.

c. Public Service’s use of one-year historic decremental cost estimates to establish avoided energy costs is inconsistent with both the forward-looking perspective and ten-year levelization of PSCo’s avoided capacity cost method.

d. The Company’s proposed method always will be based on stale historical data, and this issue will persist despite the Company’s proposal to update the historic study period. In addition, PSCo’s method is more susceptible

to the swings of the gas markets than is a levelized ten-year approach, such as the one proposed by Vote Solar.

d. Western Colorado Power Company.

165. As support for its proposed method, WCPC states:

a. PURPA mandates that avoided costs incorporate the actual costs of the utility's *own generation* which it would have operated, but for the QF power. 16 U.S.C. § 824a-3(d) (Hearing Exhibit No. 19). The Commission can, and must, require PSCo to set a true technology-specific rate for hydroelectric QFs that is based on PSCo's hydroelectric facilities, which are the relevant and comparable sources of generation.

b. Avoided costs under PURPA include the "incremental costs to a utility of electric energy or capacity or both *which, but for the purchase from the [QF] or [QFs], such utility would generate itself* or purchase from another source" (16 U.S.C. § 824a-3(d) (Hearing Exhibit No. 19) (emphasis supplied)). Thus, based on the cost of PSCo's own hydroelectric facilities, a true technology-specific avoided *energy* cost rate for hydroelectric QFs would be based on PSCo's hydroelectric facilities and would be upward of \$ 0.11/kWh. In contrast, under PSCo's proposed method (as illustrated in its proposed tariff), the *total* avoided cost rates for 2014 are less than \$ 0.03/kWh.

166. If the Commission does not adopt the WCPC proposed method, then WCPC supports the proposed Vote Solar method. As the bases for its position, WCPC states:

a. The use of the 2011 ERP values, as updated in 2013, is appropriate in an avoided cost method because: (1) the Company and the Commission used Strategist modeling-based values to determine resource needs in the 2011 ERP and to evaluate bids received in the 2013 All-Source Solicitation; (2) PSCo relies heavily on the ERP values in its calculation of avoided capacity costs; and (3) PSCo has proposed the use of Strategist in other Commission proceedings (*e.g.*, the Company proposes to use Strategist to estimate avoided costs in the Strategic Issues Docket relating to Demand Side Management).

b. To be consistent with the Commission-approved method used in the 2011 ERP: (1) PSCo should use a forward-looking method for determining avoided energy costs; (2) the method should use the natural gas costs, as forecasted and updated in the Company's ERP, beginning in 2014;⁴⁵ and (3) PSCo should add to each year's annual cost the net present value of Strategist's variable O&M value of \$ 10.43/MWh to account for full avoided variable O&M costs, as required by PURPA. To produce a ten-year, levelized avoided energy rate, the value stream should be levelized using the Company's WACC.

⁴⁵ The Company relied on the updated 2011 ERP forecasts to predict capacity need and to acquire capacity.

167. WCPC opposes the Company's proposed method. As grounds for its opposition, WCPC states:

a. Historically, to calculate the avoided energy cost rates that it would pay to QFs, PSCo used a proxy unit and assigned a heat rate to that proxy. In this Proceeding and without proof, PSCo asserts that the current method "is a poor approximation, likely to lead to probably significant errors" (April 23 tr. at 22:22-23:2), and proposes significant changes in the method it uses to calculate energy payments made to small QFs under PURPA.

b. PSCo purports to offer technology-specific rates for small QFs. However, PSCo's proposed method to calculate avoided costs is not a true technology-based approach. The result is a substantial undervaluation of the actual costs required to generate alternative power and of the benefits of QF energy to PSCo's system and to ratepayers. The result is contrary to PURPA.

c. The use of Cost Calculator is inappropriate because: (1) Cost Calculator is a proprietary model used primarily in short-term sales; (2) Cost Calculator calculates decremental costs that, as explained by PSCo witness Brockett, refer to "the costs we incur, for a very small unit of service, for example, for 1 megawatt or 10 megawatts" and, as a result, the Company conflates the costs it has already incurred with the costs it "could avoid" (April 21 tr. at 153:18-25); (3) Cost Calculator does not strictly apply economic dispatch principles; (4) Cost Calculator does not incorporate the actual costs paid by ratepayers; (5) Cost Calculator uses certain assumptions (*e.g.*, the use of incremental heat rate, the failure to include unit start-up fuel costs) that lead to unsupportable results (*e.g.*, the treatment of wind resources, the undervaluation of variable O&M costs); and (6) Cost Calculator's use effectively eliminates consideration of the highest cost energy in any hour. Because PURPA expressly requires the use of incremental (*i.e.*, the *next* unit of energy or capacity) costs to determine avoided costs, the use of Cost Calculator's decremental costs to derive avoided energy costs is contrary to PURPA.

d. The Company states that "[u]sing the Commission's approved values and/or methods for evaluating incremental resources is the best way to update the Company's avoided costs of capacity and energy" (Hearing Exhibit No. 8 at 2:23). The Commission has approved the Strategist values, which serve as a basis for PSCo's generation acquisition in the 2011 ERP. To implement its stated preference consistently, the Company should use the Strategist values to set avoided energy cost rates for QFs.

e. PSCo proposes a standard rate QF tariff that the Company recognizes "must be transparent and relatively easy to administer and understand." Hearing Exhibit No. 1 at 10. The use of Cost Calculator accomplishes neither goal because: (1) the model is extremely technical; (2) PSCo witness Scholl testified that he does not know for certain "all the costs

that are actually in Cost Calculator” (April 22 tr. at 220:20-22); and (3) PSCo witness Scholl testified that the information used in “generation-weighting” the energy payment rate is “not readily available to any potential QF seller ... looking at Revised Exhibit DRB-1” in Hearing Exhibit No. 6 (April 23 tr. at 35:7-11).

f. The record demonstrates that the Company’s hourly, decremental view of avoided energy costs under Cost Calculator disregards the real costs of PSCo’s generation facilities passed on to PSCo customers. It is the costs to customers that, theoretically, can be avoided by QF power and that should serve as the basis for an avoided cost rate. *See, e.g.*, Hearing Exhibit No. 17 at Exhibit GLC-01 at 4-5 (according to FERC, “the rates to [a utility’s] other customers should not be greater than they would have been had the utility not made the purchase from the [QF] of [QFs]”).

g. PSCo proposes “looking back” at a historic period in which Cost Calculator tracked decremental cost data of generation over every hour. This method is incongruent with the Company’s forward-looking method for calculating avoided capacity rates.

2. Discussion and Conclusion.

168. As previously stated, this Proceeding confirms that the translation from theory to practice is indeed a difficult exercise with respect to the determination of avoided costs. The relevant sections of PURPA, the relevant and applicable FERC PURPA Rules, and the relevant and applicable PUC PURPA Rules, as well as Order No. 69 and pertinent Commission Decisions, are discussed in detail above. The ALJ relies on that discussion in ruling on the method for determining avoided energy costs. In sum, at the end of this difficult exercise, however, the ALJ finds that the record does not support adoption of any of the proffered methods for determining avoided energy costs.

169. Turning to the *Public Service method*, the ALJ finds that this method, which rests on the premise that historical and unadjusted data are reasonable estimations of the Company’s future avoided energy costs, is unacceptable.

170. First, the PSCo method does not comply with the principles of avoided cost. Most importantly, the PSCo method is contrary to PURPA's most fundamental principle because the method is *not* forward-looking.

171. Second, the ALJ notes that the PSCo method for determining avoided capacity costs and the PSCo method for determining avoided energy costs are not tied to one another in any way. The ALJ finds that this separation, the purpose of which is unexplained, is not appropriate or reasonable. To the extent practicable, the two methods should be tied together, or related to one another in some way. The fact that this process may be difficult or administratively cumbersome is not a sufficient basis for completely separating the two methods.

172. Third, the ALJ finds unpersuasive Staff's argument that the Company's reliance on historical data is appropriate because the use of historical cost data to develop forward-looking rates is a long-accepted rate-making practice. Staff is correct that Historical Test Year ratemaking *begins* with the actual data reported in the utility's books and records for a 12-month historical period. Importantly, Staff fails to acknowledge that the ratemaking process does not end with the historical data. In the portion of the ratemaking process that Staff ignores, accounting adjustments, Commission-ordered adjustments, and *pro forma* adjustments⁴⁶ are made. The result of the entire process reflects the future period during which the rates are in effect. In contrast, the PSCo method *ends* with the historical Cost Calculator-derived costs results.

173. Fourth, for the reasons articulated by Vote Solar, the fact that Public Service will update its avoided energy cost rates annually does not make the method acceptable. At no point

⁴⁶ *Pro forma* adjustments are made to test year results in order for that period to be representative of certain future conditions.

in the PSCo process are the Cost Calculator-derived cost data adjusted to take into account future occurrences. Thus, by definition, the PSCo method will always be based on backward-looking data and not on forward-looking data as required by PURPA, by the implementing regulations, and by judicial and administrative decisions.

174. Fifth and finally, the ALJ finds persuasive the arguments of Vote Solar and WCPC on the issue of PSCo's method.

175. For these reasons, the ALJ does not accept the PSCo method.

176. Because the PSCo method is not accepted, the ALJ does not address either Cost Calculator or the specific issues pertaining to the Cost Calculator model. Thus, the ALJ makes no ruling, and offers no opinion, on these issues.

177. As discussed above, Public Service proposes a method that provides differentiated standard rates for the following categories: PV-Fixed; PV-Tracking; Wind; Hydro; and Other. For the reasons discussed above with respect to the method for determining avoided capacity costs, the ALJ finds it appropriate for the avoided energy cost method to include a process for the determination of technology-specific differentiated standard energy rates.

178. Turning next to the *Vote Solar method*, the ALJ finds that this method: (a) is forward-looking (*i.e.*, based on the costs of the next generation unit that the Company expects to acquire); and (b) attempts to identify, to take into account, and to assign a value to at least one energy-related cost (*i.e.*, natural gas) that PSCo can avoid by purchasing energy from QFs. Thus, the method complies with the basic requirement for determination of avoided cost and is reasonably consistent with the principles of PURPA, FERC PURPA Rules, and PUC PURPA Rules.

179. The ALJ will not adopt the Vote Solar method, however, because it is clear from the record that the Vote Solar method does not account for all energy-related costs that the Company can avoid by purchasing energy from QFs. To be acceptable, the Vote Solar method would need to be revised and expanded significantly.

180. Turning finally to the *WCPC method*, the ALJ finds that this method, which uses the energy costs of PSCo's existing hydroelectric units, is unacceptable. It is contrary to PURPA's most fundamental principle because the WCPC method is *not* forward-looking. The ALJ's reasons for not adopting the WCPC method for determining avoided capacity costs are the same reasons that the ALJ does not adopt the WCPC method for determining avoided energy costs.

181. Because the ALJ does not select, in this Proceeding, a method for determining avoided energy costs, the method must be determined in another proceeding. To create the method for determining avoided energy costs, the ALJ will order Public Service to file an application seeking Commission approval of such a method. The ALJ will order the Company to use this Decision as guidance.

VI. TERMS AND CONDITIONS IN PROPOSED TARIFF

182. Hearing Exhibit No. 6 at Revised Exhibit DRB-3 is a redlined version of the Company's proposed tariff language. Hearing Exhibit No. 6 at Revised Exhibit DRB-4 is a clean version of the Company's proposed tariff language.

A. Sale of 100 Percent of Production.

183. In rebuttal testimony, Public Service offered the following tariff language, which contains a new condition:

QFs with a design capacity greater than 10 kW but not more than 100 kW may, at the QF's option, sell their entire electrical production to the Company under standard rates, terms and conditions as set forth below.

Tariff Sheet No. P5 (Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 7).

184. In addition, the tariff language offered in rebuttal testimony provides:

Renewable QFs with a design capacity of 10kW and under may elect to take service under the Company's Net Metering Service Schedule NM or Photovoltaic Service Schedule PV. QFs with a design capacity of 10kW and under who do not elect to[,] or who do not qualify to[,] take service under Schedule NM may elect to sell all their electric production to the Company under standard rates, terms and conditions as set forth in this Small Power Production and Cogeneration Facility Policy Tariff.

The monthly payment for QFs with a design capacity of greater than 10 kW but not more than 100 kW will consist of a capacity and energy payment component expressed in dollars per megawatt hour (\$/MWH). These purchase rates are offered and available only to QFs that sell their entire production output to the Company.

Tariff Sheet No. P2 (Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 4).

1. Positions of Parties.

a. Public Service Company.

185. As support for the proposed condition, the Company states:

a. The language clarifies the tariff and reflects PSCo's original intent.

b. To date, the Company has had no request from a small QF that seeks to consume a portion of its own generation, to sell the excess to PSCo, but not to take advantage of the Company's NM tariff. In the future, if it receives such a request, PSCo will negotiate, on a case-by-case basis, the appropriate avoided cost rate with the requesting QF. If there are many such requesting QFs, the Company will consider whether it would be more cost effective to develop a standard rate for this situation.

c. The Company developed the PSCo tariff methods presented in this Proceeding based on the premise that the QF would be in a "buy-all, sell-all" relationship with Public Service (*i.e.*, the QF would sell its entire output to Public Service and PSCo would serve the QF's entire load under appropriate retail tariffs). The proposed methods, therefore, are not designed for QFs who want to sell only their excess power.

b. Staff of the Commission.

186. Staff supports the Company's requirement that a QF that wishes to sell capacity or energy (or both) at the standard rates must commit to sell the entire output of the facility. Its reasons for supporting PSCo's proposed tariff condition are:

a. PSCo's proposed rate method assumes a firm commitment of both capacity and energy, which allows Public Service to estimate how much capacity and energy is to be provided (which goes to the costs that are avoided) and at what times capacity and energy will be available (which affects its relative value to the system). Applying the Company's method to a different scenario (*e.g.*, the QF sells only a portion of its output to the Company) is inappropriate.

b. Developing standard rates for purchases of "as-available" excess energy would be difficult. Predicting when the energy would be available, and in what amounts, is difficult because it could vary significantly among facilities and would depend on any number of factors that affect each QF's load requirements.

c. Section 292.304(d) of 18 CFR provides a QF with the opportunity to sell energy on an "as available" basis, and this would cover the situations in which the QF does not qualify for the Company's net metering provision of its NM or PV tariffs and does not qualify under the proposed tariff in this Proceeding. As a result, Staff perceives no standard rate gap that must be addressed; but, if a gap is shown to exist, it does not need to be addressed in this Proceeding where the focus should be on standard rates for the standard situation that PSCo's filing was intended to address.

187. Staff does not support the concept, advanced by Vote Solar, that the avoided capacity payment rate should be available to a small QF offering to sell only excess energy when available. Staff states that FERC has explained that the capacity payment is appropriate only in the situation in which a QF

offers energy of sufficient reliability and with sufficient legally enforceable guarantees of deliverability to permit the purchasing electric utility to avoid the need to construct a generating plant, to enable it to build a smaller, less expensive

plant, or to purchase less firm power from another utility than it would otherwise have purchased.

Hearing Exhibit No. 17 at Exhibit GLC-01 at 13. Applying this standard, a small QF that offers to sell only excess energy when available does not, and cannot, provide the assurances necessary to justify receiving the avoided capacity payment.

c. The Vote Solar Initiative.

188. Vote Solar opposes the Company's requirement that a small QF that wishes to sell capacity or energy (or both) at the standard rates must commit to sell the entire output of the facility. Its reasons for opposing the Company's proposed tariff condition are:

a. PURPA requires PSCo to purchase electric energy from QFs. PSCo must purchase "any energy and capacity which is made available from a qualifying facility" (18 CFR § 292.303(a)); is required to offer standard rates for purchases from QFs with a design capacity of 100kW or less; and is required to file tariffs containing the standard rates. 18 CFR § 292.304(c); Rule 4CCR 723-3-3902(b).

b. In implementing PURPA, FERC anticipated that a QF might choose to self-consume a portion of its generated power and to sell a portion of its generated power. Thus, in addition to requiring that utilities purchase any power made available from a QF, FERC required utilities to provide a QF with supplementary power "in addition to that which the [QF] generates itself" (18 CFR §§ 292.101(b)(8), 292.305(b)(1)). Further, electric utilities must offer to operate in parallel with a QF (18 CFR § 292.303(e)), which allows the QF to "export automatically any energy which is not consumed by its own load." Hearing Exhibit No. 17 at Exhibit GLC-01 at 8.

The Commission addressed this issue in Decision No. C84-0635,⁴⁷ the decision that established PSCo's small QF tariff rate. In that Decision, the Commission approved the method that has formed the basis of PSCo's standard rates for small QFs since the inception of the tariff. As pertinent here, the Commission clarified the rolling monthly average method for calculating avoided capacity costs by deleting the word "net" in the definition of "Max Output KW." Hearing Exhibit No. 28 at 4. The Commission explained that this deletion was made to clarify that a QF may either meet its own load with its own generation, or may sell all its generated power into the grid, or any variation thereof between

⁴⁷ This Decision was issued on May 30, 1984 in I&S Dockets No. 1603 and No. 1604. This Decision is Hearing Exhibit No. 28.

these extremes. Such deletion is also made to clarify that QFs are not restricted to selling all their power into the grid.

Id. at 5.

These controlling authorities make it clear that the proposed tariff language is contrary to PURPA.

c. The Company offers two principal bases in support of its language: (a) PSCo's method is based on an avoided cost analysis that used the "full generation profiles" of the small QFs, and therefore is not designed for QFs who want to sell their excess power over load (Hearing Exhibit No. 2 at 21:14-19); and (b) noQF between 10kW and 100kW has "request[ed] a quote for supplying only excess production to the Company" (Hearing Exhibit No. 2 at 21:23-24:1), and the Company will negotiate with a QF that makes such a request. Neither is a sufficient basis for approval of the proposed condition because: (1) regardless of whether a small QF sells all its power or only its excess power to the Company, PSCo benefits from the full capacity value of the small QF;⁴⁸ and (2) PSCo is obligated to "file tariffs" containing standard rates for PSCo's purchase of capacity or energy (or both) made available from a small QF (Rule 4CCR 723-3-3902(b)), and responding to requests for a quote is insufficient to meet this legal requirement.

d. The Company and Staff assert that, through the NM tariff, PSCo offers a standard rate, as that term is used in PURPA and Colorado law, to a small QF that desires to sell only a portion of its output for that purchase. Vote Solar disagrees, and asserts that the NM tariff does not obviate the need for an option for a small QF to sell excess capacity under the QF tariff because: (1) PSCo proposes tariff language "to allow QF facilities under 10 kW that do not wish or do not qualify to take service under Schedule NM to sell their entire electrical production to the Company under the QF tariff available for QF facilities with a design capacity of over 10 kW but under 100 kW" (Hearing Exhibit No. 35 at 1); (2) PSCo admits that there could be small QFs that do not qualify for, or that do not wish to take, service under the NM tariff (April 21 tr. at 236:19-23); and (3) pursuant to PURPA and implementing regulations, small QFs that do not qualify for the NM tariff must have the option to sell their excess generation at the standard rate under the QF tariff. In addition, a separate tariff for such a QF would not be necessary because the load reduction benefits that self-consumption provides, in combination with the excess energy sold to PSCo, accounts for the full generation profile of the QF. Finally, the fact that a small QF that wishes to sell excess capacity can secure a nonstandard purchase rate or contract does not relieve PSCo of its legal obligation to provide standard rates to small QFs under PURPA.

⁴⁸ Assuming constant usage, a QF that consumes a portion of its production uses less energy from PSCo than it would if it were not consuming its own production. Thus, PSCo gets the full benefit of the generation because the QF consumes less power supplied by PSCo and sells its excess power to PSCo.

d. Western Colorado Power Company.

189. WCPC supports Vote Solar's position that, consistent with FERC's interpretation of PURPA and with the Commission's interpretation, the standard QF tariff should not contain the limitation proposed by the Company.

2. Discussion and Conclusion.

190. In Decision No. C84-0635 (Hearing Exhibit No. 28), the Commission addressed the precise issue that is presented here. In that Decision, the Commission was unequivocal that *the QF* is the entity that decides how much, if any, capacity or energy (or both) it will offer to sell to the utility. No party has directed the ALJ to a subsequent Commission decision that limits or reverses Decision No. C84-0635 on this point, and the ALJ has found none.

191. After careful consideration, the ALJ concludes that Decision No. C84-0635 is controlling authority that precludes the Company's proposed condition that the standard rates are available only to a small QF that offers to sell its entire output to the Company. As a result, the ALJ will order Public Service to remove from its terms and conditions for purchases from small QFs the language set out on Sheet No. P2 and on Sheet No. P5 (quoted above) in Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 4 and 7. This requirement will apply to the tariffs filed following the application proceeding.

B. Renewable Energy Credits.

192. On Tariff Sheet No. P5, the Company proposes the following language:

[W]ith the sale of power to the Company by the QF, the Company is purchasing the Renewable Energy Credit ("REC") associated with power generated from an

Eligible Energy Resource, unless otherwise agreed to by the Company and the QF.

Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 7.

1. Positions of the Parties.

a. Public Service Company.

193. As support for the proposed condition and in response to Vote Solar's and Staff's position that PSCo must pay the QF additional compensation for the RECs associated with the purchase, the Company states:

a. The language makes it clear that a QF offering to sell to Public Service under this tariff would be selling to PSCo the RECs, if any, associated with the power produced by the selling QF and reflects PSCo's original intent.

b. FERC has left the issue of who gets the RECs in QF transactions to the state commissions for determination under state law. FERC recognizes

that PURPA does not address the ownership of RECs and that states have the authority to determine ownership of RECs in the initial instance, as well as how they are transferred from one entity to another. In *American Ref-Fuel*, [FERC] stated that "[C]ontracts for the sale of QF capacity and energy entered into pursuant to PURPA do not convey RECs to the purchasing utility (absent express provisions in a contract to the contrary). While a state may decide that a sale of power at wholesale automatically transfers the ownership of the state-created RECs, that requirement must find its authority in state law, not PURPA."

Morgantown Energy Associates, FERC Docket Nos. EL12-36-000, QF89-25-008, 139 FERC 61,066 (2012) (*Morgantown Energy*) (Hearing Exhibit No. 17 at Exhibit GLC-02) at 17 (footnotes omitted).

c. Colorado law is clear that, absent an agreement to the contrary, sale of power at wholesale transfers ownership of a Colorado-created REC because: (1) § 40-2-124(1)(d), C.R.S., requires the Commission to establish, by rule, a system of tradable RECs; (2) the Commission did so in the Renewable Energy Standard Rules (RES Rules), Rules 4CCR 723-3-3650 *et seq.*; (3) in pertinent part, Rule 4 CCR 723-3-3652(y) defines a REC as:

a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emission reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of electric energy generated from a renewable energy resource. One REC results

from one megawatt-hour of electric energy generated from a renewable energy resource[;]

(4) consistent with industry standards, the Commission has found that a renewable resource in Colorado is, in effect, a bundled product consisting of the energy and the REC (Decision No. C05-1461⁴⁹ at ¶ 95) and, thus, a REC is a component of the renewable resource; (5) the RES Rules permit the RECs to be traded separately from the energy, but if a Colorado REC is severed from the renewable resource and traded separately, the resource becomes a non-renewable resource generating “brown energy,” which is the same as energy generated from fossil fuels; (6) in 2006, the Commission addressed the issue of who owns the RECs under PURPA-mandated contracts that predated the creation of RECs under Colorado law and ruled that, unless the contract reserved the RECs to the QF seller, when the QF sold all its output to the utility, the utility obtained the RECs (Decision No. C06-0091⁵⁰ at ¶ 40); and Rule 4CCR 723-3-3652(y) memorializes that ruling;⁵¹ and (7) Colorado utilities may acquire renewable energy under a Renewable Energy Supply Contract (Rule 4CCR 723-3-3656(f)) or under a Renewable Energy Credit Contract (Rule 4CCR 723-3-3656(g)) and, under both methods, the RECs are transferred to the utility.

Public Service argues that, under Colorado law and because a renewable resource is a bundled product: (1) renewable energy sold to a utility transfers the associated RECs to the utility; (2) nonetheless, a QF may elect to retain the RECs and not to transfer them to the utility; but, in that situation, the QF is no longer in the position to sell renewable energy; and (3) the consequence of the election to sell only the energy as the selling entity no longer qualifies as a QF and, thus, is no longer entitled to the standard rates under the Company’s small QF tariff.

d. Since the 2006 rulemaking, all contracts with renewable resources signed by Public Service require the seller to transfer the RECs to PSCo so that PSCo can acquire renewable energy. The transactions pursuant to the proposed small QF tariff will rely solely upon tariff terms and conditions; thus, it is imperative that the tariff make it clear that the Company obtains the RECs.

b. Staff of the Commission.

194. Staff opposes the Company’s proposed condition because: (a) in its opinion, there

⁴⁹ This Decision was issued on December 15, 2005, in Proceeding No. 05R-112E, *In the Matter of the Proposed Rules Implementing Renewable Energy Standards 4 CCR 723-3*.

⁵⁰ This Decision was issued on February 3, 2005, in Proceeding No. 05R-112E. It is the Commission’s decision on rehearing, reargument, and reconsideration of Decision No. C05-1461.

⁵¹ Rule 4 CCR 723-3-3652(y) provides: “‘Renewable energy supply contract’ means a contract for the sale of renewable energy and RECs associated with such renewable energy. If the contract is silent as to renewable energy credits, the renewable energy credits will be deemed to be combined with the energy transferred under the contract.”

is no state law that establishes that sale of power at wholesale automatically transfers the ownership of the state-created RECs; (b) reliance on Rule 4CCR 723-3-3656 as the state law basis for the proposed requirement in the context of QF purchases is inappropriate because that Rule is part of a comprehensive RES scheme that is unrelated to the PURPA context of this Proceeding; and (c) Public Service makes policy, not legal, arguments in support of its position. Staff takes the position that, unless and until there is explicit state law addressing the ownership of RECs in the context of purchases from QFs, the default position should mirror FERC's position that "[c]ontracts for the sale of QF capacity and energy entered into pursuant to PURPA do not convey RECs to the purchasing utility." *Morgantown Energy* (Hearing Exhibit No. 17 at Exhibit GLC-02) at ¶ 46.

c. The Vote Solar Initiative.

195. Vote Solar opposes the Company's proposed condition that a QF automatically sells RECs when it sells energy to PSCo. The bases for Vote Solar's opposition are:

a. PSCo acquires RECs as a means to comply with Colorado's RES, and RECs have a value and an associated price the Company pays for them. At present, PSCo generally (but not exclusively) acquires RECs from small QFs through its Solar*Rewards program, a standard offer rebate program established as one means to comply with the RES. If PSCo acquires RECs from customers in the Solar*Rewards program, PSCo provides incentives at a specified REC price.

b. Relying on its PURPA obligation to purchase power from QFs, PSCo seeks in this Proceeding to create an additional way to acquire RECs. The Company argues that, without the RECs, PSCo would not be purchasing renewable energy and, thus, its PURPA-mandated purchase obligation would cease to exist as to particular entities.

Vote Solar asserts that the Company's argument is flawed because: (1) FERC has stated that RECs are not "inherently convey[ed] pursuant to an avoided cost [QF] contract to the purchasing utility" (*American Ref-Fuel Company*, 107 FERC ¶ 61,016, 61,044 (Apr. 15, 2004)); (2) FERC has determined that PURPA contracts "do not convey RECs to the purchasing utility (absent an express provision in a contract to the contrary)" (*American Ref-Fuel Company*, 105 FERC ¶ 61,004, 61,007 (Oct. 1, 2003)) and that RECs have a value distinct from the underlying energy produced and exist "outside of the

confines of PURPA” and utilities’ obligation to purchase power from QFs (*id.*); and (3) FERC re-affirmed these rulings in *Morgantown Energy*, a case in which FERC concluded that a state commission finding that avoided cost rates under PURPA also compensate for RECs is inconsistent with PURPA. The proposed tariff language conveying RECs to the Company due to its PURPA QF purchase obligations is similarly inconsistent with PURPA.

c. Vote Solar acknowledges that, while state law may require that a sale of power at wholesale automatically transfers ownership of the state-created RECs, Colorado law does not do so because: (1) the RES and the Commission’s implementing rules are the state law that created RECs in Colorado; (2) PSCo witness Brockett testified that “[a]t issue in this docket is not the Colorado Renewable Energy Standard or scope of the Company’s Solar*Rewards program. At issue in this docket is a mandatory purchase obligation imposed by federal law and regulation on utilities to purchase the energy and capacity from qualifying facilities at the utility’s avoided cost” (Hearing Exhibit No. 2 at 32:15-19); (3) at present, when PSCo acquires RECs from small QFs under the Solar*Rewards program, the Company pays the REC owners at the Commission-approved REC price; and (4) as a result, there is no Colorado law basis for requiring the transfer of RECs, without compensation, along with the purchase of power at PURPA avoided cost rates.

196. Vote Solar recommends that the Commission should strike the proposed tariff language and require Public Service to include language that states that small QFs retain their RECs. This accords with Rule 4CCR 723-3-3659(d) (a contract between a qualifying retail utility and a renewable energy resource owner must specify who owns the RECs associated with the energy generated by the facility).

197. In the event the Commission determines that PSCo can acquire QF RECs with the power purchased under the proposed tariff, Vote Solar makes this recommendation: Because the value of the RECs is not included in PSCo’s avoided cost rates, the small QF tariff should include separate compensation for RECs. As the separate REC value, Vote Solar recommends the price the Company pays for RECs from similarly-sized facilities of the same technology. Specifically, Vote Solar suggests the prices set in PSCo’s Solar*Rewards program or, if the

Company is not offering incentives for RECs under the Solar*Rewards program, the last REC price paid to small QFs under the tariff. Whatever the method selected, the tariff should be clear.

d. Western Colorado Power Company.

198. WCPC supports Vote Solar's position that PSCo should not automatically acquire RECs from small QFs with the purchase of power under the standard rate QF tariff. In WCPC's opinion, RECs are an additional value of renewable power for which the QF should be compensated separately, as is done by PSCo in its Solar*Rewards program, which is a standard offer rebate program established as one means to comply with RES.

2. Discussion and Conclusion.

199. The Parties agree that FERC has left it to the states to determine the ownership of the RECs associated with QF energy sales to utilities. Because determination of ownership rests on state, not federal, law, FERC has offered no guidance on this question.

200. After, and in light of, FERC's *American Ref-Fuel Company* decision, this Commission addressed the issue of who owns the RECs associated with QF energy sales. This occurred in Proceeding No. 05R-112E, *In the Matter of the Proposed Rules Implementing Renewable Energy Standards 4 CCR 723-3*, in which the Commission promulgated the first RES Rules.

201. In that Proceeding, the Commission was called upon to determine, under Colorado state law,

the ownership of RECs, particularly for the power purchase agreements (PPAs) entered into between Public Service and QFs prior to the passage of Amendment 37. These power contracts are silent on the ownership of RECs.

Decision No. C05-1461⁵² at ¶ 94.

202. The Commission addressed both the argument that Amendment 37 is not a state law that addresses the issue of the ownership of RECs (an argument raised in this Proceeding) and the issue of REC ownership (an issue raised in this Proceeding). The Commission ruled that it does not

recognize the “unbundling” of the RECs into the electricity and the environmental attributes from [QFs] under the existing PPA contracts, which are silent on the ownership of RECs. We believe that the purchaser of the energy in these [QF] PPAs has purchased all attributes of that energy, which includes the RECs.

In reaching our conclusion, we look to the intent of the voters whether, when approving Amendment 37, they expected that [utilities] would utilize a portion of the monies to purchase the RECs associated with these existing renewable energy QF contracts. We do not believe they did. We find that the voters who supported Amendment 37 viewed it as a means to “jump start” utilities to acquire new renewable energy resources, not to pay *existing* renewable energy providers additional money. Were we to hold otherwise, new ratepayer charges in a rider designated for renewable resources would be used not for acquiring additional renewable energy, but as a windfall for existing producers of energy who were satisfied with contract terms entered into long ago without the promise of supplementary remuneration in the future.

Decision No. C05-1461 at ¶¶ 97-98 (*italics in original*). *See also* Decision No. C06-0091,⁵³ which is the decision on rehearing reargument, and reconsideration of Decision No. C05-1461 (reaffirming previous ruling that the utility owns the RECs pursuant to Colorado law because the RECs are an attribute of the renewable energy purchased by the utility). No party has directed

⁵² This Decision was issued on December 15, 2005.

⁵³ This Decision was issued on February 3, 2006 in Proceeding No. 05R-112E.

the ALJ to a subsequent Commission decision that limits or reverses Decision No. C05-1461 or Decision No. C06-0091 on this point, and the ALJ has found none.

203. After careful consideration, the ALJ concludes that these Decisions: (a) address the issue of REC ownership in the QF context under Colorado state law; (b) determine that, in the context of an energy sale by a QF, a REC is part of a bundled product that consists of energy and the associated RECs; (c) determine that the utility purchaser of QF energy purchases the attributes of that energy, which includes the RECs; and (d) are final decisions that are conclusive on this issue. As a result, the ALJ will order Public Service to include in its terms and conditions for purchases from small QFs the language set out on Sheet No. P5 in Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 7(quoted above). This requirement will apply to the tariffs filed following the application proceeding.

C. Tariff Applicable to Certain QFs Under 10kW.

204. During the hearing, Public Service clarified that the standard rate will be available to a QF with a design capacity of 10kW and below if that QF does not qualify for the Net Metering tariff (Schedule NM). Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 4. No intervenor opposed this portion of the clarification.⁵⁴ The ALJ finds that this clarification is reasonable and should be adopted.⁵⁵ The ALJ will order Public Service to change its proposed tariff language to conform with this discussion. This requirement will apply to the tariffs filed following the application proceeding.

⁵⁴ As discussed above, Intervenors did oppose the requirement that such a QF sell 100 percent of its output.

⁵⁵ The portion of the clarification that includes the requirement to sell 100 percent of the output is discussed *supra* and is not included in this adoption.

D. No Contract Required.

205. The Company will not ask a QF to enter into a legally-enforceable obligation in order to be paid the tariffed standard rate.

206. Under the tariff, the small QF will receive the capacity payment rate in effect when that QF applies to provide power to the Company under the tariff or achieves commercial operation, whichever is later. That capacity payment rate will apply to that QF for so long as that QF continues to sell power to the Company under this tariff, irrespective of whether that period is longer than, shorter than, or equal to the ten years assumed in the development of the avoided capacity payment rate.

207. Under the tariff, the Company will update the avoided energy payment rate on an annual basis. The avoided energy payment rate will change on an annual basis for all small QFs providing power to PSCo under the QF tariff.

208. No intervenor opposed these tariff conditions. The ALJ finds: (a) the evidentiary record supports these tariff conditions; (b) the conditions are reasonable and are consistent with the current practice; and (c) with a slight modification, the tariff conditions should be adopted.

209. A small QF selling capacity under this tariff will not have a written contract, and that QF may sell capacity to the Company for a number of years. The ALJ finds it reasonable, under these circumstances, for there to be a Company-prepared document, given to the QF, that informs both the Company and the QF of the capacity payment rate to be paid to the QF under the terms of the tariff. The document must state both the specific capacity payment and the date on which the capacity payments will begin.

210. The ALJ will order Public Service to amend its proposed tariff language to conform to this modification. This requirement will apply to the tariffs filed following the application proceeding.

E. Language Changes to be Consistent with Changes in the Tariff.

211. Public Service proposes numerous changes to its tariff sheets entitled Small Power Production and Cogeneration Facility Policy. Hearing Exhibit No. 6 at Revised Exhibit DRB-4 at 3-9. There is no disagreement that the tariff language must be changed to reflect the results of this Proceeding and of the follow-on application proceeding.

212. The ALJ finds it reasonable and necessary to amend the tariff language to make the tariff consistent with the substance of the terms and conditions approved by the Commission and to remove obsolete provisions. The ALJ will order Public Service to change its proposed tariff language to conform the language to the terms and conditions approved by the Commission and to remove obsolete provisions. This requirement will apply to the tariffs filed following the application proceeding.

F. Annual Filing and Process to Update Payment Rates.

213. The Company agrees to use updated cost information and updated studies in setting avoided cost rates. To accomplish this, the Company proposes to make, not later than December 1 each year, an Advice Letter filing with accompanying tariff sheets to set, for the following calendar year, the capacity payment rate component and the energy payment rate component of the standard rates.

214. The annual Advice Letter filings will be made on 30 days' notice. After the Company files its Advice Letter, the Commission process allows for protests and requests for hearing to be filed prior to the date that the new rates take effect. In its discretion, the

Commission can set the proposed tariffs for hearing in order to investigate them. This is the same process that the Company uses at present to set the standard rates in the current tariff. The Company has used this process since the beginning of the QF program in the 1980s, the Commission is familiar with this process, and Staff is comfortable with this process.

215. In addition to the proposed tariff sheets, the Company proposes to provide the following with each annual filing: (a) an exhibit demonstrating the derivation of the proposed capacity payment rate using the Commission-approved method and including footnotes that show the source of the data used to derive the proposed rate; and (b) an exhibit demonstrating the derivation of the proposed energy payment rate using the Commission-approved method and including footnotes that show the source of the data used to derive the proposed rate.

216. Public Service assures the Commission that, in deriving the proposed standard rates: (a) the Company will use the most current data available to the Company; and (b) at all times, the data used will be consistent with data filed by the Company with the Commission in resource-related cases (primarily, ERP and RES proceedings).

217. WCPC expresses concern about the proposed process because: (a) protests and requests for hearing do not necessarily result in suspension of the tariff; and (b) it is unlikely that the work papers behind the Company's proposed rates will be public. The ALJ notes that these are generic concerns that can be raised with respect to almost any Advice Letter filing.

218. The ALJ finds that the Company's proposed process -- which continues the existing process -- for annually updating the standard rates is appropriate and is reasonable. The ALJ will order the Company to use this process after the Commission has approved a method for determining the avoided capacity costs and a method for determining the avoided energy costs.

219. In addition, the ALJ will order the Company to provide, with each annual filing, the additional exhibits described above because that information will assist the Commission and interested persons in understanding the derivation of the proposed standard rates. This requirement will not apply until the Commission has approved a method for determining the avoided capacity costs and a method for determining the avoided energy costs.

220. Finally, the ALJ will order the Company to use the most current data available to it and to use data that is consistent with data filed by PSCo with the Commission in resource-related cases (*e.g.*, ERP and RES cases) when the Company is preparing its small QF standard rate annual filings.

VII. CONCLUSIONS

221. The Commission has jurisdiction over the subject matter of this Proceeding and over the Parties to this Proceeding.

222. Any argument, issue, or method not addressed in this Decision was considered and not adopted.

223. The effective date of the proposed tariffs filed by the Company on August 27, 2013, with Advice Letter No. 1649 - Electric must be suspended permanently and may not be amended further.

224. The proposed tariffs filed by the Company on January 16, 2014, with its Advice Letter No. 1649 - Electric Amended must be suspended permanently and may not be amended further.

225. Consistent with the discussion above, Public Service must file an application for approval of a method for establishing the avoided capacity cost rates and the avoided energy cost

rates in its Electric Purchase - Small Power Production and Cogeneration Facility Policy Section of PSCo's P.U.C. No. 7 - Electric tariff.

226. Consistent with the discussion above, Public Service must amend the terms and conditions of its Electric Purchase - Small Power Production and Cogeneration Facility Policy Section of PSCo's P.U.C. No. 7 - Electric tariff to conform with this Decision. These amendments will be contained in the tariff approved in the application proceeding.

227. Consistent with the discussion above, Public Service must use the most current data available to it and must use data that is consistent with data filed by PSCo with the Commission in resource-related cases (e.g., ERP and RES cases) when the Company is preparing its annual small QF standard rate filings.

228. The ALJ finds and concludes that the time for filing a response to exceptions to this Recommended Decision should be -- and will be -- shortened to **3:00 p.m. on August 28, 2014.**

229. Pursuant to § 40-6-109, C.R.S., the Administrative Law Judge recommends that the Commission enter the following order.

VIII. ORDER

A. The Commission Orders That:

1. The effective date of the tariff sheets filed with Advice Letter No. 1649 - Electric on August 27, 2013 is permanently suspended and shall ~~not~~ be further amended.

2. The effective date of the tariff sheets filed with Advice Letter No. 1649 - Electric Amended on January 16, 2014, is permanently suspended and shall ~~not~~ be further amended.

3. Consistent with the discussion above, Public Service Company of Colorado shall file an application for approval of a method for establishing the avoided capacity cost rates and

of a method for establishing the avoided energy cost rates in its Electric Purchase - Small Power Production and Cogeneration Facility Policy Section of PSCo's P.U.C. No. 7 - Electric tariff.

4. The time within which to file a response to exceptions taken to this Recommended Decision is shortened to 3:00 p.m. Mountain Time on August 28, 2014. Absent further order, the Commission shall not consider a response to exceptions filed in this Proceeding after this date and time.

5. This Recommended Decision shall be effective on the day it becomes the Decision of the Commission, if that is the case, and is entered as of the date above.

6. As provided by § 40-6-109, C.R.S., copies of this Recommended Decision shall be served upon the parties, who may file exceptions to it.

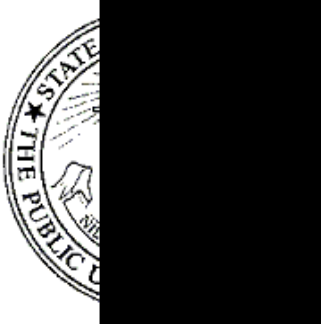
7. In accordance with the stipulation of the Parties, the time within which to file exceptions to this Recommended Decision is ten calendar days after service of this Decision.

a) If no exceptions are filed within ten calendar days after service or within any extended period of time authorized, or unless the decision is stayed by the Commission upon its own motion, the recommended decision shall become the decision of the Commission and subject to the provisions of § 40-6-114, C.R.S.

b) If a party seeks to amend, modify, annul, or reverse basic findings of fact in its exceptions, that party must request and pay for a transcript to be filed, or the parties may stipulate to portions of the transcript according to the procedure stated in § 40-6-113, C.R.S. If no transcript or stipulation is filed, the Commission is bound by the facts set out by the administrative law judge and the parties cannot challenge these facts. This will limit what the Commission can review if exceptions are filed.

8. If exceptions to this Decision are filed, they shall not exceed 30 pages in length, unless the Commission for good cause shown permits this limit to be exceeded.

(S E A L)



THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

MANA L. JENNINGS-FADER

Administrative Law Judge

ATTEST: A TRUE COPY

A handwritten signature in cursive script that reads "Doug Dean".

Doug Dean,
Director