DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MONTANA

IN THE MATTER OF the Inquiry by the Montana Public Service Commission into its Implementation of the Public Utility Regulatory Policies Act of 1978	**RENEWABLE NORTHWEST'S CLOSING COMMENTS** Docket No. N2015.9.74

I. Introduction

Renewable Northwest appreciates the opportunity to file additional comments following the June 1, 2016 roundtable part of the Montana Public Service Commission's ("Commission") Inquiry into its Implementation of the Public Utility Regulatory Policies Act of 1978 ("PURPA").

Renewable Northwest is a nonprofit advocacy organization with members that include wind, solar, and geothermal renewable energy developers, as well as associated businesses. We work closely with renewable energy developers, policymakers, and governmental agencies on developing and implementing renewable energy policies. Additionally, we have been active in discussions and proceedings related to states' implementation of PURPA across the Northwest.

These comments are focused on several of the issues raised throughout the investigation. First, we describe why the Commission's current policy regarding the length of standard contracts is reasonable, and elaborate on why the short contracts lengths that other stakeholders have proposed in this investigation are unreasonable. We then encourage the Commission to establish full standard contracts in order to increase the transparency, fairness, and efficiency of the PURPA contracting process. We follow with a discussion of why NWE should not receive all of the renewable energy credits ("RECs") produced by a QF if the purchase rate includes the incremental cost of CO_2 emissions, since a requirement would fail to account for the other environmental attributes encompassed by a REC. Finally, we highlight the need for Montana utilities to use a robust methodology in order to properly assess QFs' contribution to their system.

II. The Current 25-year Length for Standard Contracts is Reasonable and Consistent with Montana Law.

The current 25-year length for standard QF contracts is reasonable and should be maintained. PURPA was passed to promote independent energy generation and competition in otherwise monopolistic utility markets by, among other things, requiring utilities to purchase energy from independently owned QFs. In states with a strong implementation of the Act, PURPA has been an important avenue of independent energy

development and one of the only sources—if not the only significant source—of competition for the states' monopolistic utilities. However, utilities have an incentive to disfavor PURPA resources because they do not earn a rate of return on generating resources that they do not own. As a result, utilities in states with a strong PURPA implementation, including those across the Pacific Northwest, frequently propose shortening the length of QF power purchase agreements ("PPAs").[1] As discussed further below, when utilities succeed the resulting shorter contract lengths tend to discourage QF development.

A. Montana Law Favors Long-Term Contracts Set with a Focus on the Economic Feasibility of Qualifying Facilities.

Montana law requires the encouragement of long-term contracts in order to facilitate QF development. Under M.C.A. § 69-3-604(2), "*[l]ong-term contracts* for the purchase of electricity by the utility from a qualifying small power production facility must be encouraged in order to enhance the economic feasibility of qualifying small power production facilities" (emphasis added). This statute directs the Commission to keep in mind the economic feasibility of QFs when developing its policy regarding the length of QF contracts. The Commission's current policy of 25-year QF PPAs is consistent with this legislative direction. In contrast, short-term contracts, like those proposed by some stakeholders in this investigation, have led to little to no PURPA development in other states. Those states' experiences indicate that moving to short-term QF PPAs would likely decrease the economic feasibility of QFs in Montana, depriving the state of opportunities for economic development and resulting in a policy inconsistent with Montana law.

We encourage the Commission to reject proposals to change its current policy regarding the length of standard contracts. The current 25-year standard contract length enhances the economic feasibility of QFs in Montana and has spurred economic development in the state. Still, Northwestern Energy ("NWE") and the Montana Consumer Counsel ("MCC") have argued throughout this inquiry for short-term standard contracts ranging from two to seven years.[2] However, neither NWE nor MCC have demonstrated that QFs would be able to obtain financing under such short-term contracts. Moreover, neither NWE nor MCC established that such short-term contracts would be consistent with M.C.A. § 69-3- 604(2). Accordingly, we encourage the Commission to reject such short-term contract proposals.

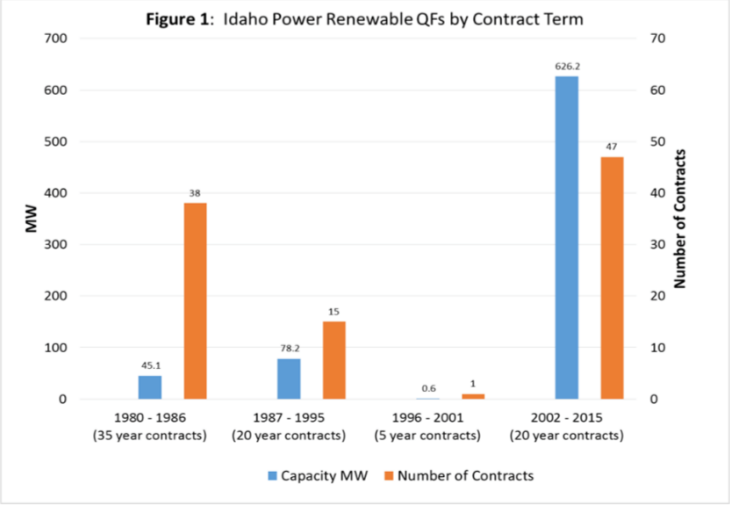
---

[1] In Oregon Public Utility Commission (OPUC) Docket No. UM 1725, Idaho Power requested a reduction of the contract term for QF projects greater than 100 kW from 20 to two years; in OPUC Docket No. UM 1734, PacifiCorp requested a reduction of the fixed-price term of QF PPAs from 15 years to three years; in Idaho Public Utility Commission Case Nos. IPC-E-15-01 (Idaho Power Co.), AVU-E-15-01 (Avista Corp.), and PAC-E-15-3 (PacifiCorp), three utilities requested a reduction of the contract length for projects beyond the eligibility cap from 20 to two years; in Utah Public Service Commission Docket No. 15-035-53 PacifiCorp requested a reduction of the maximum term of QF PPAs from 20 to three years; and in Wyoming Public Service Commission Docket No. 20000-481-EA-15, PacifiCorp proposed a reduction of its fixed-price QF PPAs from 20 years to three years.

[2] NorthWestern Energy's Initial Comments on PURPA Implementation at p. 5-6; Initial Comments of the Montana Consumer Counsel at 10-12.

Experiences in other states demonstrate that, far from enhancing the economic feasibility of QFs, short-term QF PPAs decrease the ability of viable QFs to obtain financing, effectively eliminating an important source of economic development for a region. For example, MCC implies that an approach similar to the Idaho Public Utility Commission's ("IPUC"), which reduced the length of QF PPAs to two years, would be reasonable for Montana.[3] However, MCC does not mention that Idaho has seen zero wind or solar QF development since the IPUC reduced the length of QF PPAs.[4]

Similarly, NWE and MCC argue that short-term contracts, with a duration ranging from five to seven years, would be consistent with Montana law.[5] However, Northwestern states that have instituted such short-term QF PPAs have seen little to no QF development in their territories since adopting such policies. For example, the graph below shows that QF development in Idaho from 1996 to 2001 was almost non-existent. During that period, Idaho had a policy of five-year QF PPAs.[6] Similarly, Washington has seen little to no QF development under its policy of five-year QF PPAs. For example, PacifiCorp has a total of only three QFs in Washington, with nameplate capacity of under 6 MW.[7] Only one of those three QFs, a dairy farm digester, operates with a five-year contract.[8] The other two operate under contracts longer than 20 years.[9] In summary, other states' experience with short-term contracts support the conclusion that short-term QF PPAs do not enhance the economic feasibility of QFs and are, therefore, inconsistent with Montana law.



Source: OPUC Docket No. UM 1734, Sierra Club/100 McGuire/16

[3] Initial Comments of the Montana Consumer Counsel at 10.
[4] This is evidenced by looking at the open and closed cases in the IPUC's website since each QF PPA must be approved in an IPUC Case. The last solar or wind QF contract approved is a 20-year contract approved prior to the term reduction.
[5] NorthWestern Energy's Initial Comments on PURPA Implementation at p. 5-6; Initial Comments of the Montana Consumer Counsel at 12.
[6] OPUC Docket No. UM 1734, Sierra Club/100 McGuire/16.
[7] OPUC Docket No. UM 1734, Hr'g. Tr. at 13, lines 14-16 (Griswold).
[8] *Id*. at lines 3-4.
[9] *Id*. at line 23.

B. Long-term PURPA Contracts Benefit Ratepayers.

Long-term standard contracts strike the appropriate balance between the financial viability of QFs and the consumer indifference standard. NWE and MCC argue for short-term PPAs as a tool to ensure consumer indifference.[10] However, the appropriate tool to ensure consumer indifference is a well-vetted and robust standard avoided cost rate setting methodology. In contrast, reducing the length of QF PPAs singles out the only source of competition that Montana utilities may currently face, undermines the economic feasibility of QFs, and deprives ratepayers of the benefits of PURPA development.

NWE and MCC also imply that forecast risks in the context of PURPA are unique in that they impose undue risk on consumers.[11] We disagree with this implication because forecast risk exists in every long-term decision-making exercise facing utilities and the Commission. In fact, the smaller and incremental nature of PURPA development helps mitigate the risk to utility portfolios by bringing in diverse projects of different sizes.

Additionally, shortening the contract length would deprive ratepayers of the several benefits that PURPA projects offer. For example, one of the primary benefits of having PURPA projects as part of a utility portfolio are stable energy prices for ratepayers as a result of long-term, fixed-price contracts. Additionally, PURPA projects are less risky for ratepayers than utility owned resources because QF developers assume all risks for, among other things, construction cost overruns, technical updates, repairs, outages, and under-generation. In contrast, for utility-owned resources, ratepayers are often responsible for costs associated with those risks.

III. Full Standard Contracts are an Important Tool for an Efficient, Fair and Transparent PURPA Contracting Process.

Commission approval of a full standard PPA would lead to increased efficiency, fairness, and transparency in the PURPA contracting process. Standard contracts are more efficient for both developers and utilities because they decrease the transactional costs associated with entering into a QF PPA. Standard contracts also lead to increased transparency in the contracting process because they decrease the ability of either party to impose unreasonable roadblocks or to unreasonably delay the contracting process. Such transparency is important in the context of QF PPA negotiations because utilities, as the only buyer available for QFs in a particular geographic area, have monopsony power. As a result, standard contracts can curb a utility's ability to exert its monopsony power by proposing unreasonable terms, and can lead to a fair PURPA contracting process.

[10] NorthWestern Energy's Initial Comments on PURPA Implementation at p. 4-5; Initial Comments of the Montana Consumer Counsel at 9-11.
[11] *Id*.

Standard contracts appear particularly important in Montana given the concerns with unreasonable terms in NWE's QF PPAs that QF developers raised in this investigation.[12] Commission approval of full standard QF PPAs would avoid such conflict between QF parties and Montana utilities and could lead to a fairer process. Therefore, we encourage the Commission to approve full standard PPAs.

NWE asserts that the Commission should not approve full standard PPAs because "each contract negotiation is different as are the terms and conditions requested by QF developers."[13] Mindful of NWE's concern, we encourage the Commission to allow QFs, as the party with less negotiating power, to elect whether to 1) sign a full standard PPA previously approved by the Commission, or 2) negotiate terms with the utility.

IV. Montana Utilities Should Not Receive All of the Renewable Energy Credits Produced by a QF if the Purchase Rate Includes the Incremental Cost of CO_2 Emissions.

In its comments, NWE states that it should receive "all environmental attributes from the QF project, including the [RECs]" if the purchase rate includes the incremental cost of CO_2.[14] However, a REC includes all environmental attributes associated with the electricity, including but not limited to the incremental cost of CO_2 emissions. Therefore, requiring QFs to turn over all RECs in exchange for rates that only compensate the QF for the incremental cost of CO_2 emissions would undercompensate the QF by failing to account for the other environmental attributes encompassed by a REC. Besides, NWE has not provided justification for why it should receive all the RECs from a QF if the avoided cost rate includes the incremental CO_2 cost. Therefore, we encourage the Commission to reject NWE's recommendation, as it would undercompensate renewable QFs for the environmental attributes associated with their generation.

V. Utilities Should Use a Robust Methodology to Accurately Calculate Resource Capacity Values

Utilities should use a robust methodology, such as the Effective Load Carrying Capability ("ELCC") method, for calculating capacity values. Selecting a capacity value without a robust methodology likely leads to utilities undervaluing the contribution of QFs to their system. As a result, the current practice of setting standard rates for wind QFs based on an assumed five percent capacity value is not reasonable. That capacity value may also be low, as suggested by the capacity values for wind that other utilities in

[12] Initial Comments of LEO Wind and Hydrodynamics, Inc. at 12; Initial Comments of Crazy Mountain Wind, LLC and WindData, LLC at 12-13.
[13] NorthWestern Energy's Initial Comments on PURPA Implementation at 6.
[14] *Id*. at 8.

the Northwest calculated using robust methodologies. We have included some examples in the tables below.

Wind – 2021 Marginal ELCC

March 9, 2016 Slide 38

- Values below are for specific scenarios and do not apply to all technologies, locations, quantities, or time frames
- ELCC is expressed as percent of nameplate based on avoided CU

Incremental Renewables	Annual ELCC	Winter ELCC	Summer ELCC
Wind, Gorge, 300 MW	12%	22%	10%
Wind, Montana, 300 MW	24%	52%	19%

Source: Portland General Electric,
2016 IRP Presentation, March 9 2016

Table N.2 – Peak Capacity Contribution Values for Wind and Solar

	East BAA			West BAA		
	Wind	Fixed Tilt Solar PV	Single Axis Tracking Solar PV	Wind	Fixed Tilt Solar PV	Single Axis Tracking Solar PV
CF Method Results	14.5%	34.1%	39.1%	25.4%	32.2%	36.7%
2013 IRP Results	4.2%	13.6%	n/a	4.2%	13.6%	n/a

Source: PacifiCorp
2016 IRP

Standard rates should not be set without a calculation of technology-specific capacity values. Estimates of average capacity values for various technologies are utility-specific. As a result, Renewable Northwest recommends that NWE estimates average capacity value for various technologies in its system through either an ELCC calculation or a suitable alternative such as the capacity factor ("CF") approximation method.

The ELCC is defined as the amount by which the utility's load can increase when the specific technology resource (for example, solar or wind) is added to the system while maintaining the same system reliability, as measured by a system adequacy metric such as Loss of Load Probability ("LOLP") or Loss of Load Expectation("LOLE").[15] The LOLP is the probability of a loss of load event in which the system load is greater than available generating capacity during a given time period.[16] The LOLE is the sum of LOLPs during a planning period, usually one year, and gives the expected number of time periods in which a loss of load event occurs (for example 0.1 days per year).[17] The percentage of the ELCC (in MW) to the nameplate capacity of the resource added (in MW) is the capacity credit (in percent) of the added generator. Therefore, a generator has some level of ELCC and capacity value if it reduces the LOLP is some or all hours or days.

[15] National Renewable Energy Laboratory, "Comparison of Capacity Value Methods for Photovoltaics in the Western United States", July 2012, at 4.
[16] *Id*. at 2.
[17] *Id*.

The ELCC method is recognized as a common and robust approach to determining capacity credit. The North American Electric Reliability Corporation ("NERC") recommended "the use of LOLP, LOLE, or related metrics for resource adequacy calculations and for determining the capacity contribution of VG [variable generation]".[18] In addition, the National Renewable Energy Laboratory ("NREL") concluded that the ELCC method is "…well recognized and widely used due to [it's] robustness."[19] However, the data requirements for a robust ELCC can be non-trivial, so alternative approximations have been developed. NREL found that some approximation techniques can yield similar results to an ELCC, finding "the CF (capacity factor approximation method) to be the most dependable technique".[20]

The CF approximation method is discussed in NREL's "Comparison of Capacity Value Methods for Photovoltaics in the Western United States", where a variety of methods to approximate the ELCC (effective load carrying contribution) are evaluated.[21] Three capacity factor approximation methods are presented:

1) the average capacity factor during the peak-load hours;

2) the capacity factor during the peak-LOLP hours; and

3) the capacity factor during the peak-LOLP hours, where the capacity factor is weighted by the LOLP.

Michael Milligan, Ph.D, et al published a paper in 1999 on "A Comparison and Case Study of Capacity Credit Algorithms for Intermittent Generators" in which the different capacity factor approximation methods are investigated and compared to an ELCC calculation. In this study, the authors conclude that method 2) (referred to as the "LOLP method") should be used over method 1) (referred to as the "load" method) and method 3) (referred to as the "weighted method") because it is closest to an actual ELCC calculation.[22]

Renewable Northwest's preferred methodology for determining the long-term capacity credit of a variable generator's contribution to capacity—in terms of capacity needed for system adequacy—is the ELCC. If performing the appropriate ELCC calculation is not possible for a utility (for example owing to insufficient data or complexity) then the capacity factor approximation method that uses the capacity factor during peak load hours should be used.

---

[18] NERC, "Methods to Model and Calculate Capacity Contributions of Variable Generation for Resource Adequacy Planning", March 2011.
[19] National Renewable Energy Laboratory, "Comparison of Capacity Value Methods for Photovoltaics in the Western United States", July 2012, at 27.
[20] *Id*.
[21] *Id*. at 6.
[22] National Renewable Energy Laboratory, "A Comparison and Case Study of Capacity Credit Algorithms for Intermittent", March 1997 at 6.

VI. Conclusion

Renewable Northwest again appreciates this opportunity to inform the Commission's inquiry into its implementation of PURPA. We commend the Commission for policies that allow ratepayers to reap the many benefits of increased competition and that allow Montana to enjoy the increased opportunities for economic development that come with PURPA development. We look forward to further engaging with the Commission on these issues.

Sincerely,

/s/ Michael O'Brien
Senior Policy Analyst

/s/ Silvia Tanner
Staff Counsel

/s/ Jeff Fox
Montana Policy Manager