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

IN THE MATTER of Application for
Approval of Avoided Cost Tariff Schedule
QF-1

UTILITY DIVISION
DOCKET NO. D2016.5.39

FLS ENERGY AND CYPRESS CREEK'S PREHEARING MEMORANDUM

I. INTRODUCTION

Petitioners FLS Energy and Cypress Creek Renewables (collectively "Intervenors") acting by and through undersigned counsel, respectfully submit this prehearing memorandum to the Montana Public Service Commission ("Commission"). Intervenors are both developers of utility-scale solar photovoltaic projects in Montana that are "Qualifying Facilities" ("QFs") under the Public Utility and Regulatory Policies Act ("PURPA"), 16 U.S.C. §§ 824a-3, *et seq.* Intervenors' ability to develop such projects is significantly affected by NorthWestern Energy's (hereinafter "NWE") tariffs for QFs and by the methodology used to calculate NWE's avoided costs for the purpose of establishing those tariffs. Intervenors contend that NWE's proposed tariffs utilize flawed methodology that is inconsistent with PURPA and that, if approved by the Commission, would result in significantly lower avoided cost rates being available for QFs

seeking to interconnect to the NWE system. In addition, Intervenors both contend that they have projects that should have been grandfathered under the existing QF-1 Option 1(a) rate, and that the Commission unlawfully deprived them of the right to contract at that rate in violation of PURPA.

II. SUMMARY OF ISSUES

Intervenors contend that NWE's proposed avoided energy cost is inaccurate in that it is lower than NWE's actual avoided cost, and is therefore unlawful, and furthermore is based on a methodology that is insupportable under PURPA. Intervenors also maintain that NWE's proposal for capacity costs significantly understates the value of solar with respect to capacity contributions to NWE's system. Finally, Intervenors have concerns about certain proposed deductions from NWE's proposed avoided cost calculations – deductions which are inconsistent with PURPA and which pose the risk of discriminatory treatment if adopted by the Commission.

From a technical standpoint, Intervenors are concerned about NWE's approach to incorporating PowerSimm into its avoided cost calculations. In developing its forecast avoided energy cost, NWE has developed a price forecast based on a forward strip price of electricity, added a nominal escalator to that price over the 25-year term, and then used that as an input to the PowerSimm model. PowerSimm was not used to calculate NWE's system costs with and without proposed QFs such as those developed by Intervenors. Instead, PowerSimm was used to determine when NWE was in a net purchase or sale position. When, according to PowerSimm, NWE is projected to be in a net purchase position, NWE would assign a market price to QF-supplied energy. If, however, PowerSimm determines that NWE is in a net sale position, NWE assigns the variable cost of the "avoidable resource" as the avoided cost, if the market price is

higher than the variable cost of operating the “avoidable resource.”¹ If, however, the market price is lower than the variable cost of operating the “avoidable resource,” then NWE assigns a zero value to QF power, regardless of whether there is an ability to resell the QF generation into the market.

This approach violates economic dispatch principles, and artificially suppresses estimated avoided cost. If the avoidable resource is “in the money,” meaning its production costs are lower than the market price of energy, then there is no need to reduce its output during times when the QF resource is generating. The QF resource’s dispatch cost will be zero, as the energy is taken whenever produced. Both resources will be in the money under this type of circumstance, so the prudent decision by NWE would be to sell additional energy into the market.

NWE’s approach of assigning a zero value to energy produced when in a Long-2 position is even more punitive to QFs. This goes a step further than the approach NWE took in the *Greycliff* case, Docket No. 2015.8.64, where NWE assigned a lower value to the QF depending on whether the utility estimated where the market price was in relation to the “avoidable resource” and should similarly be rejected by the Commission. As NWE is able to re-sell excess energy at the market price, that is the appropriate value to assign to QF energy production under the Long-2 scenario. Adopting NWE’s approach would be unduly discriminatory, and should be rejected by the Commission, just as it rejected the utility’s methodology in its *Greycliff* decision.

Intervenors also have concerns about the opaque nature of the PowerSimm modeling assumptions used by Ascend Analytics and NWE itself. In its testimony and data responses,

¹ NWE is using this term inaccurately, as “avoidable resource” would imply these resources were yet to be constructed. Since the “avoidable resources” exist, hence the operating cost calculation, these are “embedded resources.” This raises concerns about whether NWE is in fact curtailing QF projects, such as those owned by intervenors, for “light loading” conditions, which would be in violation of several FERC decisions, including *Idaho Wind Partners 1, LLC*, 140 F.E.R.C. ¶ 61,219, PP 36-41 (2012).

NWE does not discuss the stochastic nature of the PowerSimm model, and does not provide any information about the algorithms used, the specification of probability distributions and correlation and covariance statistics, or other key input data and algorithms that play a pivotal role in the PowerSimm simulation environment. This is critical information, because the specification of volatility and correlation parameters plays a key role in influencing the dispatch results, and calculation of net long and short energy market positions.

Intervenors also contend that the Commission should reject NWE's use of an electric price forecast developed using a forward strip price and require instead that NWE use a long-term fundamentals-based electric price forecast, such as that published by the Northwest Power and Conservation Council ("NPCC"). Although the Commission has previously rejected requests to require NWE to use a fundamentals-based electric price forecast,² it should revisit that decision. Forecasting market prices based on illiquid estimates by reporting services which report no actual sales at those prices is a poor substitute for the rigorous work performed by the NPCC and the results set forth in its Seventh Power Plan. As noted by Intervenors' expert Roger Schiffman, the NPCC is a well-respected organization in the Pacific Northwest, and one of its goals is to develop independent and objective power plans and policy analysis for the region.

² According to the Commission, Montana's Small Renewable Generators' Expert Richard Lauckhart questioned whether . . . "whether forward price strips provide useful information since prices for out years in the strips are based on an insufficient number of transactions. He maintained that future price estimates should incorporate a fundamentals-based forecast, which he said reflects physical assumptions about supply and demand. Ex. MSIRG-3, pp. 4-5." Order 7108E, Docket D2010.77, ¶ 60 (Oct. 19, 2011); and more recently the same argument was made by Greycliff Wind Prime's expert, Roger Schiffman in Docket No. 2015.8.64, where Mr. Schiffman objected to NWE's methodology and proposed using the NPCC's Seventh Power Plan. The Commission held that NWE's approach was reasonable given that it was previously approved by the Commission and had been a feature of the rate making approach in QF-1 Dockets since D2010.7.7. See Order 7436d, Docket No. 2015.8.64, ¶¶ 31-32 (September 16, 2016). Obviously, the fact that a non-fundamentals forecast is then escalated by a fundamentally-based natural gas price forecast escalator, and although the Commission may like the result (i.e., lower avoided cost payments to QF) that NWE's electric price forecast produces, it nonetheless continues to raise the concern that non-fundamental approaches to market price forecasting are not industry standard and are generally considered less accurate and are likely to miss projected future shifts in energy markets.

Furthermore, NWE has relied upon the NPCC forecast and analysis in some of its resource planning efforts in its 2015 Electricity Supply Resource Procurement Plan, Docket No. N2015.11.91. Adoption of the NPCC forecast would establish avoided energy cost for QF-1 resources at \$48.32/MWh.

NWE also continues to insist on deducting a substantial (and ever increasing) sum for transmission costs for power purchased at Mid-C, and for energy sales when NWE is in a Long-1 position. However, the data suggest that the deduction is significantly overstated. As Mr. Schiffman has testified, when NWE purchases QF energy and is in a net short position, it is able to avoid at least a portion of the basic difference included in NWE witness Luke Hansen's analysis, because it does not have to pay for transmission that it otherwise would when purchasing at Mid-C, or from WECC locations other than Montana. Mr. Hansen did not disclose this location adjustment in his testimony, but did disclose it in NorthWestern's response to Data Request PSC-011. Mr. Hansen stated therein that NWE applied a \$4.33/MWh Mid-C to Montana adjustment to the market energy prices, plus 5% losses. In its response to Data Request FLS-16, NWE shows the detail underlying its Mid-C to Montana adjustment. On average, NWE is applying a Mid-C to Montana adjustment of \$6.69/MWh when in a purchase position, and \$4.49 when in a sales position. That is a substantial adjustment, and significantly higher than the current \$1/MWh location adjustment in the QF-1 Option 1(a) and Option 2(b) tariffs.

Intervenors' position is supported by NWE's actual market purchase and sale history. According to purchase and sales transaction data provided by NWE in response to Data Request FLS/CCR-016, the Mid-C to Montana differential that NWE experienced between 2013 and 2016 has been much smaller than it is proposing in this case. For historical purchase transactions, the differential has averaged -\$0.90/MWh, which is close to the \$1.00/MWh value

applied in the current QF-1 tariff. On a median basis, the differential for purchases has been $-\$0.50/\text{MWh}$, and on a volume weighted basis, it has been $-\$0.06/\text{MWh}$, or basically zero. For historical sales transactions, the differential has been $-\$1.68/\text{MWh}$ on an average basis, $-\$2.88/\text{MWh}$ on a median basis, and $-\$2.94/\text{MWh}$ on a volume-weighted basis. These values are all far below the level NWE is proposing. As NWE is predicting greater market purchase activity than market sale activity (under Long-1 and Long-2 conditions), the historical purchase and sale data suggest that any Mid-C to Montana adjustment should be below $\$1.50/\text{MWh}$.

If one reverses the PowerSimm net short analysis discussed above, and if the location differential from Mid-C is reduced to $\$3/\text{MWh}$, the QF-1 avoided energy cost estimates derived by NWE would be very close to the $\$49/\text{MWh}+$ values adopted by the Commission in the *Greycliff* case. If the location differential from Mid-C is reduced to $\$1.50/\text{MWh}$ or lower, the QF-1 avoided energy cost exceeds $\$50/\text{MWh}$. This is based on NWE's own analysis, with those two necessary adjustments.

Intervenors also have several objections to NWE's estimate of the capacity contribution percentage, particularly for solar resources. First, Intervenors believe NWE's estimate is well below the level established for solar generation in other jurisdictions. Recent integrated resource plans or solar capacity studies from other utilities in the West, including several utilities with service territories adjacent to NWE's, value solar PV capacity at 30% to 50% of its nameplate capacity, a value significantly greater than the capacity credit that NWE proposes in this proceeding. Mr. Schiffman notes that the solar capacity values used by these other western utilities include 28 to 51 percent used by Idaho Power, 34 to 39 percent used by PacifiCorp, and 40% used by Public Service Company of Colorado. NWE is substantially understating this value for solar resources. In addition, the exceedance approach proposed by NWE appears to unfairly

subsidize NWE shareholders and ratepayers, again at the expense of QF project owners and developers. As an example, according to data responses filed by NWE, the exceedance value for the Dave Gates Generating Station is lower than that for solar resources. Yet, NWE fully recovers capital and fixed costs in rates for Dave Gates. This highlights an implicit subsidy of the approach, which should be carefully examined by the Commission before adopting such a method.

In addition, NWE's capacity credit methodology relies on technically outdated information that suppresses the calculation of solar resource capacity contribution. The 1.15 to 1 DC to AC power ratio used by NWE (as discussed in NWE's response to MCC data request MCC-006) is out of date by several years. Use of the old ratio deflates capacity contributions relative to a system, compared to use of an up-to-date DC/AC ratio.

The DC to AC ratio has risen as solar panel prices have fallen. The higher the ratio, the more panels on a system, and the more energy is "clipped"/dumped by the inverter so that the maximum nameplate capacity allowed by a PPA/rate design rule is met more hours of a year. The ratio applied in the capacity contribution methodology must be updated to reflect current technology, which dictates applying the industry-standard 1.4:1 DC:AC ratio. *See* Lawrence Berkeley National Laboratory study, "Utility Scale Solar" at https://emp.lbl.gov/sites/all/files/lbnl-1006037_report.pdf

In summary, NWE's avoided cost methodology is inappropriate, discriminatory, and plainly inconsistent with a proper calculation of avoided costs.

Finally, in response to NWE's Motion for Emergency Suspension of the QF-1 Tariff for New Solar Qualifying Facilities with Nameplate Capacities Greater than 100 kW, on June 16, 2016 (service date, July 25, 2016), the Commission suspended NWE's obligation to enter into

power purchase agreements (“PPA”) with QFs under the existing QF-1 Option 1(a) rate, grandfathering only those QFs that had, as of June 16, 2016, both tendered a fully negotiated executed PPA to NWE and had executed an NWE interconnection agreement. This grandfathering test was based on the Commission’s test for creation of a legally enforceable obligation under PURPA established in the *Whitehall Wind* case, Docket D2002.8.100, Order 8444e, ¶¶ 45-47 (2010). However, the Federal Energy Regulatory Commission (“FERC”) recently found that the second prong of that test to be inconsistent with PURPA and FERC’s implementing regulations. *FLS Energy, Inc.*, 157 FERC ¶ 61,211 (December 15, 2016) (hereinafter “*FLS*”). In *FLS*, FERC stated as follows:

Here, because the utility can, for example, delay the facilities study and the tendering to the QF of an executable interconnection agreement, the requirement of an executed interconnection agreement imposed by the Montana Commission is no different than requiring a utility-signed contract before the QF can establish a legally enforceable obligation, which, as noted, the Commission has previously found is inconsistent with PURPA and our regulations. In sum, as the Commission has stated: “when a state limits the methods through which a legally enforceable obligation may be created to only a fully-executed contract, the state’s limitation is inconsistent with PURPA, and our regulations implementing PURPA.”³ The Montana Commission’s requiring a signed interconnection agreement is no different than requiring a utility-signed contract, and equally impermissible.

FLS, 157 FERC ¶ 62,111, at P. 26.

In light of FERC’s decision, Intervenors are entitled to have those projects for which they had tendered fully negotiated executed PPAs to NWE on or before June 16, 2016, to be grandfathered under the existing QF-1 Option 1(a) rate as opposed to being subject to any new rate the Commission may establish in this proceeding.

III. CONTESTED ISSUES

As summarized in detail above, Intervenors and NWE disagree about the appropriate way to calculate avoided costs in this proceeding, and believe NWE's above-described adjustments to avoided cost are inappropriate, not supported by substantial evidence, or discriminatory. Intervenors have provided testimony and evidence supporting their calculation of avoided energy cost in the range of \$48/\$49 per MWh.

In addition, Intervenors believe, based on NWE's recent responses to data requests, that NWE intends to argue that Intervenors' projects for which they had tendered fully negotiated executed PPAs to NWE on or before June 16, 2016, are not eligible to be grandfathered under the existing QF-1 Option 1(a) rate, notwithstanding FERC's *FLS* decision. Intervenors maintain, to the contrary, that each of these projects should be grandfathered under the old rate, and the Commission should immediately require NWE to execute the applicable PPAs tendered to it Intervenors.

IV. WITNESSES

A. Roger Schiffman will testify regarding his critique of NWE's avoided cost methodology and results and the results of his own investigation of NWE's avoided cost.

B. Patrick McConnell will testify regarding the additional issues of financeable contract length and performance measures.

Intervenors reserve their right to call any rebuttal witnesses that may be necessary as well as relied upon by any party in their case-in-chief or rebuttal case, if any. At present, Intervenors intend to conduct cross examination of Mr. John Bushnell, Mr. Bleau LaFave and Mr. Luke Hanson.

V. EXHIBITS AND DISCOVERY FOR INTRODUCTION AT HEARING

1. Intervenors will introduce the direct prefiled testimony of Roger Schiffman and the additional issues testimony of Patrick McConnell. Intervenors expressly reserve the right to rely on any party's prefiled testimony, testimony introduced for the first time at hearing, and any exhibits prepared by any party that may be relevant. Intervenors also expressly reserve the right to call a surrebutal witness to respond to data responses submitted by NWE to any party which were raised after
2. All data responses by or to any party in this proceeding;
3. Any document used for impeachment purposes;
3. Any exhibit listed as an exhibit by any party to this proceeding; and
4. Any document relied upon by any party at hearing.
5. Intervenors further reserve the right to supplement this exhibit list with documents or evidence discovered in the course of preparing for hearing or necessary for impeachment or rebuttal.

VI. PREHEARING MOTION

Intervenors intend to present oral argument before hearing that 14 of their projects are entitled to LEOs as of the date each tendered its PPA to NWE, and that each of these projects is entitled to the existing QF-1 rate for solar generating QFs, and that Order 7500 should be rescinded as inconsistent with PURPA. Intervenors also intend to argue this in post-hearing briefs. The decision to suspend the QF-1 tariff and apply the Whitehall Wind test was made in this proceeding, and should be directly addressed by the Commission in this proceeding.

VII. ORDER OF HEARING OR SEQUENCE OF WITNESSES

Intervenors request that Mr. McConnell testify relatively early in the hearing, so he may catch his flight the evening of January 18, 2017.

RESPECTFULLY SUBMITTED THIS 16th DAY OF JANUARY, 2017

UDA LAW FIRM, PC

By: _____

Michael J. Uda

Attorney for Intervenors FLS Energy and Cypress
Creek Renewables

CERTIFICATE OF SERVICE

I hereby certify that on the 16th day of January, 2017, I served the foregoing by first-class mail, postage prepaid mail on the following:

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