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

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IN THE MATTER OF NorthWestern Energy's Application for Interim and Final Approval of Revised Tariff No. QF-1, Qualifying Facility Power Purchase	))))	REGULATORY DIVISION DOCKET NO. D2016.5.39

Direct Testimony
of
Jaime T. Stamatson
on Behalf
of
The Montana Consumer Counsel

October 14, 2016

Q. Please state your name and business address.

A. Jaime T. Stamatson, Montana Consumer Counsel ("MCC"), 111 North Last Chance Gulch, Suite 1B, Helena, MT 59620-1703.

Q. In what capacity does the MCC employ you?

A. Since October 2012 I have been employed at the MCC as an Economist. My duties include participating in various stakeholder groups representing the interests of Montana utility consumers and providing economic analysis on regulatory issues appearing in Dockets before the Montana Public Service Commission ("PSC" or "Commission").

Q. Please describe your professional qualifications.

A. I earned a Bachelor of Science degree in 2004 and a Master of Arts degree in 2007, both in Economics, from Kansas State University. Prior to my employment at the MCC, I was employed by the Kansas Corporation Commission ("KCC") from August 2008 to October 2012 as a Senior Research Economist where my duties included conducting research and providing economic analysis on regulatory issues before the KCC. Prior to this I was employed by Kansas State University's Department of Economics as a Graduate Teaching Assistant where my duties included teaching undergraduate courses in Macroeconomics and conducting research on a variety of Macroeconomic and Microeconomic topics.

Q. Have you previously testified before this Commission?

A. Yes, in Docket Nos. D2011.4.35, D2012.5.49, D2015.2.18, D2015.8.64, D2015.7.59, and D2016.7.56.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to comment on NorthWestern Energy's ("NorthWestern" or "the Company") proposed avoided cost methodology and calculations. The specific areas I wish to comment on are as follows:

I. NorthWestern's proposed methodology used to calculate its QF-1 rates.

II. The inclusion of standard rates for both with and without renewable energy credit ("REC") transfers.

III. Integration rates.

I. Proposed Avoided Cost Methodology

Q. What is NorthWestern's proposed methodology for calculating its avoided cost of energy?

A. In this Docket NorthWestern is proposing to use PowerSimm, a production cost model, to calculate resource-specific avoided cost rates for wind, solar, and hydro/other sources of potential QFs. This approach attempts to forecast all hours of generation, load, market prices, and fuel prices over a 25-year period, determining when the Company is short and long, in order to assign values to QF energy based on the costs a QF would cause the

utility to avoid at a specific hour. NorthWestern has proposed three specific circumstances, conditions known as Short, Long 1, and Long 2, which all have different values as to what cost the utility is avoiding during those hours.

The Short condition occurs when NorthWestern's generation is less than its load. This condition occurs in approximately 48% of all hours of modelling runs for all three resource types.[1] During this condition, NorthWestern assumes the avoided cost of energy is equal to the Mid-C market price less a basis differential of $4.33 plus 4% losses to reflect NorthWestern's ability to avoid transmission costs and line losses by procuring power within the state of Montana instead of at Mid-C.[2]

The Long 1 condition occurs when NorthWestern's generation is greater than its load and the market price is greater than the variable cost of its marginal generation unit. This condition occurs in approximately 41% of all hours of modelling runs for all three resource types.[3] During this condition, the avoided cost of energy ascribed by NorthWestern is equal to variable cost of the marginal dispatchable unit as that is the unit the QF resource would be offsetting.

[1] Data Request VS-008(c).
[2] Data Request PSC-011.
[3] Data Request VS-008(c).

The Long 2 condition occurs when NorthWestern's generation is greater than its load and the market price is less than the variable cost of its marginal generation unit. This condition occurs approximately 11% of all hours of modelling runs for wind and hydro/other and 10% for solar.[4] During this condition, the avoided cost of energy ascribed by NorthWestern is zero as the utility assumes there is no avoidable resource.[5]

Q. What is NorthWestern's proposed methodology for calculating capacity payments?

A. Capacity payments to QFs are based on two factors; the levelized capacity cost of the unit a QF is assumed to displace and that QF's capacity contribution during high load hours.

NorthWestern is proposing that capacity payments be based on the levelized capacity cost of an Internal Combustion Engine ("ICE") generation unit. This unit is assumed to be an 18MW Wartsila 18V50SG[6] with an online date of 2019[7] as modelled in its 2015 Electricity Supply Resource Procurement Plan ("2015 Plan"). Capacity payments are levelized for contract durations from 1 to 25 years[8] but do not begin until 2019, the date the ICE unit is assumed to come online.[9]

[4] Data Request VS-008(c).
[5] Data Request VS-008(b).
[6] 2015 Plan, Volume 1, Chapter 9, pp. 2.
[7] *Id*. Chapter 12, pp. 8.
[8] Prefiled Direct Testimony of John B. Bushnell, pp. 9
[9] Data Request MCC-002.

The capacity contribution of a QF is measured by the capacity it contributes on a reliable basis during the highest 10% On-Peak load hours in a given year. These top 10% On-Peak hours are identified and a QF's generation during these hours is ranked from high to low. The assumed capacity contribution of a QF is the generation value the QF exceeds 85% of the time ("its 85% exceedance level").

A QF has two options it can choose, Method 1 or Method 2, as to how it can be paid for capacity. Method 1 is based on a cumulative average of its 85% exceedance level up to year five, at which point it becomes a five year rolling average of its current and past four years' 85% levels. Method 2 uses four years of default capacity contribution values and its 85% exceedance level in year one. Over time, the default capacity contribution values are replaced by measured 85% exceedance levels until the calculation becomes a five year rolling average of 85% exceedance levels like Method 1 at year five. Method 2 is only available to wind, solar, and hydro QFs and default capacity contribution values are 5% of nameplate for wind, 7.8% of nameplate for solar, and 36%[10] of nameplate for hydro.

[10] Errata filing in D2016.5.39, Prefiled Direct Testimony of John Bushnell, pp. 3.

Q. Do you agree with NorthWestern's proposed methodology for calculating its avoided cost of energy?

A. In part, I do agree. Speaking about the proposed methodology in general, although it is more complicated than previous avoided cost methodologies, NorthWestern's proposed methodology attempts to strike a balance between offering small QFs long-term standard offer rates and ensuring that ratepayers are economically indifferent between sources of supply.

Since NorthWestern acquired the hydroelectric facilities ("hydros"), its generation needs have changed significantly. Prior to acquiring the hydros, the Company had very little owned generation and relied primarily on long term contracts and short term market purchases to satisfy its load obligations. Currently, the Company has very different power needs. Its portfolio is now long during light load hours and short during heavy load hours.[11] Even over the 25-year PowerSimm runs, the Company is still assumed to be long during the majority of hours. However, when NorthWestern is long, it does not necessarily mean it is not avoiding market purchases when it takes energy from a QF just because it physically has more than enough generation to serve its load. Whether NorthWestern is avoiding the market or not depends on the relative cost to run its marginal dispatchable unit serving load relative to the market. In a long situation, the

[11] Direct testimony of Joseph M. Stimatz, pp.34, Docket No. D2013.12.85.

Company's avoided cost will either be the variable cost of its highest cost marginal dispatchable unit serving load, or the market. The Long 1 condition accurately recognizes this, but the Long 2 condition does not.

Q. Why isn't the market NorthWestern's avoided cost under the Long 1 condition?

A. The market isn't NorthWestern's avoided cost in this situation because it is cheaper for NorthWestern to run its own generation units than it is to procure energy on the market. When a QF puts energy onto NorthWestern's system, the Company must take it. In order to accommodate that energy, NorthWestern has to back down its marginal generating unit. Absent a QF's output, NorthWestern's economic course of action would be to satisfy its load obligations fully with its own generation. Adding the output of a QF onto its system partially offsets the output of the Company's highest cost marginal generating unit, and the variable cost of that unit is the cost the Company is avoiding.

Q. Why is the market, and not zero, NorthWestern's avoided cost under the Long 2 condition?

A. If NorthWestern was in what it refers to as a Long 2 situation, absent the presence of a QF, the economic course of action for the Company to take would be to back down its high variable cost generation and procure cheaper energy from the market. The Company should not be running non-

economic units absent some type of must-run constraints for system reliability. Adding the output of a QF onto NorthWestern's system would partially offset some market purchases, so that would be the cost the Company is avoiding.

Q. Do you agree with NorthWestern's proposed methodology for calculating its avoided cost of capacity?

A. I believe NorthWestern's proposed methodology for calculating its avoided cost of capacity strikes a balance between offering long-term standard rates for small QFs and maintaining consumer indifference.

NorthWestern needs capacity during On-Peak hours. QFs are primarily renewable, usually non-dispatchable, and often have generation profiles that don't match system peak. Therefore, capacity payments need to match capacity contributions to result in reasonable rates. The 85% exceedance method proposed by Northwestern provides a reasonable measure of a QF's reliable capacity contribution during On-Peak hours.

Q. Do you agree with NorthWestern's default capacity values for solar, wind, and hydro and its Method 2 for capacity payment?

A. I do not believe that Method 2 is necessary in its QF-1 Tariff. The default capacity values are either based on legacy numbers (5% for wind) or generic generation profiles (7.8% for solar and 36% for hydro). Even QFs that choose Method 2 for their capacity payment will still get payment

based on a five-year average capacity contribution that includes at least one year of capacity contribution based on an 85% exceedance level. After five years, both payment methodologies would be equivalent. Default capacity values may not reflect a QF's actual capacity values and thus may not result in just and reasonable capacity payments. For these reasons, I recommend that the Commission not adopt Method 2 for calculating capacity payments under NorthWestern's QF-1 Tariff.

II. Standard Rates for with and without REC transfer

Q. What are your thoughts on NorthWestern's proposal for a standard rate in this filing that automatically compensates QFs for their transfer of RECs to the Company?

A. The proposal to offer a QF-1 rate with the inclusion of RECs is a significant departure from previous QF-1 filings. The problem with a rate that includes the value of environmental attributes is that the future value of such attributes – including a value for carbon beginning in 2022 – is highly uncertain. We have no way of knowing if, and when, the REC market in Montana will incorporate a value of carbon and what that value will be. There is also an issue with NorthWestern's assumed timing for environmental attributes. It appears that the Company is valuing environmental attributes solely on the carbon price assumptions in its 2015

Plan. This approach ignores the fact that Montana RECs currently have market value which is not reflected in the proposed rate.

Q. NorthWestern included carbon prices in its 2015 Plan. Isn't using those carbon price assumptions to value RECs consistent with its fuel and energy price assumptions in the 2015 Plan?

A. It may appear consistent to simply use the carbon price assumptions in the 2015 Plan to value RECs, but I do not believe such an approach is accurate or appropriate. In addition to the uncertainty of future carbon prices, the problem with making carbon price assumptions in Montana is that we have no prior historical data or experience to base them on. NorthWestern's carbon price assumptions are based on the Energy Information Administration's ("EIA") Greenhouse gas 2015 ("GHG15") case, which is a generic carbon assumption for the entire United States. While it may be appropriate to use generic carbon assumptions in resource planning (in order to see how carbon prices affect resource selection), I do not believe it is appropriate to base long-term standard rates on these assumptions.

I have deliberately not referred to the carbon prices in NorthWestern's 2015 Plan as a price forecast but instead as price assumptions, because there is no historical data associated with them. In order for a forecast to be useful, there must be historical data associated with it so that a statistical comparison can be made between that data and

the forecast. Without this, one cannot have any confidence that the prices in the forecast will likely materialize. Utilizing these carbon price assumptions to calculate standard QF rates places unnecessary risk on ratepayers.

Q. Do you believe that QFs should have to sell the RECs associated with their output to an entity other than NorthWestern?

A. Not necessarily. Consistent with prior Commission orders, there simply should not be a standard offer rate that includes the conveyance of RECs.[12]. Because NorthWestern will still need RECs to comply with the Montana Renewable Power Production and Rural Economic Development Act,[13] it is likely that it will seek to procure the RECs associated with renewable QF generation. Not offering a standard rate with RECs does not prevent NorthWestern and QFs from engaging in bilateral negotiations for RECs. Continuing to allow the value of RECs to be determined through bilateral negotiations (and REC markets) will mitigate the risk to ratepayers, and avoid a scenario in which ratepayers are locked into paying excessive REC prices for many years into the future.

[12] Final Order 7108e, Docket No. D2010.7.77, ¶77 (Oct.13, 2011); Final Order 7199d, Docket No. D2012.1.3, ¶¶ 43-44 (Nov.20, 2012).
[13] MCA 69-3-2001 through MCA 69-3-2010.

III. Integration Rates

Q. What are your thoughts on NorthWestern's proposed integration rates for variable generation in this filing?

A. Although the Commission has repeatedly criticized NorthWestern for its failure to measure regulation needs and costs, NorthWestern is not proposing any changes to its existing WI-1 Wind Integration Tariff in this Docket.[14] This Tariff has not been updated since September 1, 2013, and it is clearly stale. There is also no proposal for an integration rate for solar QFs, which by their variable nature will impose additional regulation needs and costs on NorthWestern's system.

NorthWestern's current WI-1 Tariff is a product of the GENIVAR study, which was conducted well before the acquisition of the hydros and NorthWestern's switch from Control Performance Standard 2 ("CPS2") to BAL-001-2 Real Power Balancing Control Performance Standard ("RBC").

In its 2015 Plan, NorthWestern conducted an optimization study of the hydros in order to determine the amount of regulation services they could provide. Based on that study, it determined that the hydros could be used for both regulation and contingency reserves, and that those assets could supply approximately 50% of the Company's regulation needs. This

[14] Order on Reconsideration 7347a, Docket No. D2014.4.43, ¶¶ 30-31 (Mar. 4, 2015); Order 7338b, Docket No. D2014.1.5, ¶¶ 25-26 (Apr. 14, 2015); Final Order 7395d, Docket No. D2015.2.18, ¶ 36 (Apr. 24, 2015).

would take some of the pressure off of Dave Gates Generating Station ("DGGS"), which is the primary asset in NorthWestern's portfolio used to provide these services, and would allow DGGS to also be used for peaking purposes. However, there are some problems with NorthWestern's analysis.

First, the optimization study of the hydros was not co-optimized with the Company's thermal units. There needs to be a true co-optimization study conducted to determine the exact contribution the hydros can make towards NorthWestern's regulation needs.

Secondly, the optimization study that NorthWestern included in its 2015 Plan was conducted under the old CPS2 performance standard, which is significantly different than the RBC standard the Company must comply with today. Unlike CPS2, RBC compliance requirements vary depending on the frequency of the interconnection. As a result, the amount of capacity that needs to be dedicated to regulation also varies.

Q. What are your recommendations to the Commission regarding NorthWestern's proposed integration rates?

A. As it did in the last QF-1 proceeding (D2014.1.5) and the Greenfield Docket (D2014.4.43), the Commission should again find that "consumers should not be responsible for additional costs that are not prudently incurred."[15] For wind and solar integration costs attributable to standard

[15] Order 7338b, ¶ 26; Order 7347a, ¶ 31

rate contracts, "NorthWestern has not demonstrated that costs exceeding the current rates in Schedule WI-1 would be prudently incurred." Ratepayers should not be responsible for integration costs that should have been paid by wind and solar QFs through tariffed integration rates.

I suggest two options for the Commission. However, either one of them should only be temporary until NorthWestern conducts a true co-optimization study of the hydros in conjunction with its thermal units under RBC compliance to calculate new integration rates for both wind and solar. This should be concluded well before the Company's next QF-1 filing so there can be an update to the current QF-1 Tariff in effect.

The first option the Commission could take is to leave the current WI-1 rates in place, as proposed by NorthWestern. Although the current WI-1 rates are out of date and do not include integration rates for solar, NorthWestern has failed to adequately study this issue or provide any of the information that would be necessary to update integration rates. Coupled with the ratepayer protections previously approved and described above, leaving the current WI-1 rates in place would be an acceptable, temporary outcome.

The second option is for the Commission to direct NorthWestern to update its WI-1 Tariff in a similar fashion to what was requested by Commission Staff in Data Request PSC-019(c), with commodity costs updated to reflect the latest available information as suggested in

NorthWestern's response to Data Request PSC-025(a). Either option should only be a temporary placeholder until a true co-optimization study under RBC compliance is conducted to calculate new wind and solar integration rates.

Q. Please summarize your recommendations to the Commission.

A. I recommend the Commission take the following actions in this Docket.

1. Accept, in part, NorthWestern's proposed methodology for calculating its avoided cost of QF energy using PowerSimm. Specifically, accept the Company's proposal to value the market as its avoided cost when it is short, accept the Company's proposal to value the variable cost of its highest cost dispatchable marginal generating unit as its avoided cost in the Long 1 condition, and reject the Company's proposal to set its avoided cost as zero in the Long 2 condition and instead direct NorthWestern to value the market as its avoided cost;
2. Accept NorthWestern's proposed methodology for calculating its avoided cost of capacity using an 85% exceedance measurement of QF capacity contributions;
3. Reject NorthWestern's proposed Method 2 for paying wind, solar, and hydro QFs for capacity contributions based in part on default capacity contribution assumptions;

4. Reject NorthWestern's proposal to fix REC values based on the carbon price assumptions in its 2015 Plan, and instead continue to allow the value of RECs to be determined through bilateral negotiations if the parties so choose;
5. Find that NorthWestern has not demonstrated that costs exceeding the current rates in Schedule WI-1 would be prudently incurred, and protect ratepayers from integration costs that should be paid by wind and solar QFs through tariffed integration rates; and
6. Direct NorthWestern to conduct a true co-optimization study of the hydros and its thermal units under RBC compliance and to calculate new integration rates for both wind and solar based on that study, which should be concluded well before the Company's next QF-1 filing.

Q. Does this complete your testimony?

A. Yes.