

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

IN THE MATTER OF NorthWestern Energy's) REGULATORY DIVISION
Application for Approval of Avoided Cost Tariff)
Schedule QF-1) DOCKET NO. D2016.5.39

**RESPONSES TO NORTHWESTERN ENERGY'S FIRST SET OF
DATA REQUESTS TO VOTE SOLAR, LLC**

NWE-001 Subject: Workpapers

Provide in electronic format with all formulas intact all workpapers for Mr. Beach's testimony in this docket, including but not limited to:

- (a) His Exhibit RTB-2
- (b) Each Table and Figure in his pre-filed testimony
- (c) All calculations in the text of his pre-filed testimony

Response:

Please see the following Excel worksheets:

- Analysis of Montana PCAFs.xlsx
- MidC Forecast - final.xlsx
- Revised Exhibit_(JBB-1) D2016.5.39.xlsx
- Solar Exceedance and Capacity Value – Top 10 percent QF peak period.xlsm
- Updated MT Gas Forecast.xlsx
- Henry Hub – Historical Monthly Average Prices.xlsx
- SAM Model Input files for 2010 to 2015
lat46.105_lon-112.875_2010.csv, lat46.105_lon-112.875_2011.csv,
lat46.105_lon-112.875_2012.csv, lat46.105_lon-112.875_2013.csv, and
lat46.105_lon-112.875_TMY.csv (for 2014 and 2015).

The SAM model inputs were used with NWE's SAM model settings.

NWE-002 Subject: Input and Output Data

Provide the original data sources for all inputs used by Mr. Beach in performing the various calculations and modeling contained in his pre-filed testimony and exhibits, and provide electronic versions, with all formulas intact, of all outputs of any modeling that was performed.

Response:

Please see response to NWE-001 and Mr. Beach's testimony references for all of the data inputs used by Mr. Beach. The sources of this data include: (1) data provided by NWE (e.g. hourly substation loads, NWE hourly system loads, hourly solar production modeled using SAM for the years 2006-2009), (2) EIA's *AEO 2016* Henry Hub gas price forecast, (3) Chicago Mercantile Exchange (CME) forward market prices for AECO natural gas as of September 1, 2016, (4) Mid-C historical market prices from EIA, (5) Mid-C forward market prices for 9/1/2016 provided by NWE.

NWE-003 Subject: Referenced studies, reports, and IRPs

Provide complete copies of all studies, reports, IRPs, and similar writings referenced by Mr. Beach in his pre-filed testimony, and for which he did not provide a publicly available website from which the document can be obtained. See, for example, his Table 2, and his footnotes 27, 49, 51, 61, and 62.

Response:

Vote Solar objects to this question to the extent it does not identify all items which NWE seeks to obtain from a publicly available website. The materials referenced in NWE's request are attached, and available online at the following locations:

The Idaho Power 2015 IRP solar capacity values of 28% to 51% are shown on page 51 of the IRP, which is available at the following link:

www.idahopower.com/pdfs/AboutUs/PlanningForFuture/irp/2015/2015IRP.pdf.

The PacifiCorp 2015 IRP in which Table N.1 shows solar capacity values of 34% (fixed tilt) to 39% (single axis tracking) is available at the link:

www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2015IRP/PacifiCorp_2015IRP-Vol2-Appendices.pdf.

The PSC Colorado's 2013 Distributed Solar Generation Study, in which Table 1 of Appendix V (at page 78 of 96 on the .pdf document) shows solar capacity value for single axis trackers of 40% (southern front range) and above (northern front range, San Luis valley, and western slope), is available at:

<http://www.eei.org/issuesandpolicy/generation/NetMetering/Documents/Costs%20and%20Benefits%20of%20Distributed%20Solar%20Generation%20on%20the%20Public%20Service%20Company%20of%20Colorado%20System%20Xcel%20Energy.pdf>.

There should also be a copy of this study under Colorado Public Utilities Commission Docket 13A-0836E.

Table 9.3 of the Avista 2015 IRP is at: <https://user-3golrxp.cld.bz/Avista-s-2015-Electric-IRP>.

Table 9.3 on page 9-7 of the 2015 IRP report shows monthly solar capacity credits by month. The values in the 50 MW column indicate summer values that range from 37% in May to 45% in July.

With regard to items referenced in footnote 27: First, the Utah PSC testimony referred to is at www.psc.utah.gov/utilities/electric/15docs/1503553/269244Direct%20Testimony%20of%20R%20Thomas%20Beach%20for%20Sierra%20Club%209-16-2015.docx. Table 1 (at page 33) of that document shows that PacifiCorp Rocky Mountain Power annual average REC prices dropped from \$31.79 per MWh in 2010 to \$5.56 per MWh in 2014.

Second, NV Energy's 2014 RPS Compliance Report is at <http://cesa.org/assets/2015-Files/NV-Energy-2014-RPS-Compliance-Report.pdf>.

Regarding footnote 49, a link to the May 2013 PSC Colorado study of the costs and benefits of solar generation is provided above in our response to this question. The \$6.60 per MWh fuel hedge value is shown on Table 16, under the base gas scenario.

Regarding footnote 51, the North Carolina Commission order setting avoided cost parameters is at: <http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=4d85c17b-ef0a-4dc4-a0fd-c84d4f39ef80>.

Regarding footnote 61, the referenced discovery response is at:
<http://www.psc.utah.gov/utilities/electric/15docs/1503553/269247Exhibit%20B%20-%20Selected%20Discovery%20Responses%20from%20RMP%209-16-2015.pdf>

Regarding footnote 62, a link to the Idaho Power 2015 IRP has been provided above, in the response to this question.

NWE-004 Subject: Previous Testimony

Provide complete copies of the following testimony and exhibits referenced by Mr. Beach on the following pages of his Exhibit RTB-1.

- (a) Pg. 3, item 9 (Cal.)
- (b) Pg. 7, item 34 (Cal.)
- (c) Pg. 10, item 52 (Cal.)
- (d) Pg. 11, items 59 & 61 (Cal.)
- (e) Pg. 13, item 69 (Cal.)

Response:

We provide electronic copies of the following documents:

Prepared Joint Testimony of R. Thomas Beach and Dr. Robert B. Weisenmiller on Behalf of the **California Cogeneration Council** (I. 89-07-004 — July 15, 1991)

Prepared Direct Testimony on behalf of the **California Cogeneration Council** (R. 99-11-022—May 7, 2001), and

Prepared Rebuttal Testimony on behalf of the **California Cogeneration Council** (R. 99-11-022—May 30, 2001).

Prepared Direct Testimony of R. Thomas Beach on behalf of the California Cogeneration Council (R. 04-04-003/R. 04-04-025 — August 31, 2005), and
Prepared Rebuttal Testimony of R. Thomas Beach on behalf of the California Cogeneration Council (R. 04-04-003/R. 04-04-025 — October 28, 2005)

Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Alliance (A. 07-01-047 — August 10, 2007), and
Prepared Rebuttal Testimony of R. Thomas Beach on behalf of the Solar Alliance (A. 07-01-047 — September 24, 2007)

Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Alliance (A. 08-03-015 — September 12, 2008), and
Prepared Rebuttal Testimony of R. Thomas Beach on behalf of the Solar Alliance (A. 08-03-015 — October 3, 2008)

Prepared Direct Testimony of R. Thomas Beach on behalf of The Vote Solar Initiative (A. 10-11-015—June 1, 2011)

NWE-005 Subject: Previous Testimony

Provide complete copies of the following testimony and exhibits referenced by Mr. Beach on the following pages of his Exhibit RTB-1.

- (a) Pg. 15, item 81 (Cal.)
- (b) Pg. 16, item 2 (Idaho)
- (c) Pg. 17, item 1 (North Carolina)
- (d) Pg. 18, item 1 (Utah)

Response:

We provide electronic copies of:

Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Energy Industries Association (California CPUC, R. 12-06-013—September 15, 2014)

Direct Testimony of R. Thomas Beach on behalf of the Idaho Conservation League and the Sierra Club (Case Nos. IPC-E-15-01/AVU-4-15-01/PAC-E-15-03 — April 23, 2015), and

Rebuttal Testimony of R. Thomas Beach on behalf of the Idaho Conservation League and the Sierra Club (Case Nos. IPC-E-15-01/AVU-4-15-01/PAC-E-15-03 — May 14, 2015)

Direct, Response, and Rebuttal Testimony of R. Thomas Beach on Behalf of the North Carolina Sustainable Energy Association (In the Matter of Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities – 2014; Colorado Docket E-100 Sub 140; April 25, May 30, and June 20, 2014)

Direct Testimony of R. Thomas Beach on behalf of the Sierra Club (Utah Docket No. 15-035-53—September 15, 2015)

NWE-006 Subject: Rejection of position

Identify by state and item, as shown in Mr. Beach's Exhibit RTB-1, the proceedings in which Mr. Beach's advocacy on behalf of solar energy or solar projects, was rejected, in whole or in part.

Response:

Vote Solar objects to NWE-006 on grounds that it is vague, ambiguous and unduly burdensome. First, NWE-006 is vague and ambiguous with respect to what it means for Mr. Beach's advocacy to be "rejected" in the context of the particular proceedings identified in RTB-1. To the extent this request calls for a legal analysis of the decisions associated with these proceedings, such a request is improper. See Kuiper v. Dist. Court of Eighth Judicial Dist. of State of Mont., 193 Mont. 452, 463, 632 P.2d 694, 700 (1981) (mental impressions, opinions, and conclusions concerning the litigation are protected under the work-product doctrine).

Second, NWE-006 calls for extensive research and compilation of information that is outside of the scope of discovery. RTB-1 identifies testimony prepared by Mr. Beach pertaining to solar energy and solar projects over the course of more than a decade. Neither Mr. Beach nor Vote Solar/Montana Environmental Information Center are in possession of final decisions in each proceeding, nor do they recollect or are they aware of the specific findings of the final decisions regarding particular issues to which Mr. Beach submitted testimony in every proceeding. It would be unduly burdensome to require Mr. Beach or Vote Solar to obtain final decisions in each docket and to research the outcome of Mr. Beach's advocacy on each issue involved in such proceedings. See La Chemise Lacoste v. Alligator Co., Inc., 60 F.R.D. 164 (D. Del. 1973) (Party must provide relevant facts readily available to it but it should not be required to enter into extensive independent research in order to acquire such information); Wright & Miller, 8B Fed. Prac. & Proc. Civ. § 2174 (3d ed.) ("A party should provide relevant facts reasonably available to it but should not be required to enter upon independent research in order to acquire information merely to answer interrogatories.").

In any event, RTB-1 identifies docket information for each proceeding, pursuant to which NWE may obtain the requested information through its own analysis of the proceedings and final decisions.

NWE-007 Subject: Retention Agreement

Provide a complete copy of the contract or similar agreement under which Mr. Beach was retained to provide testimony in this docket.

Response:

Vote Solar objects to NWE-007. Under Rule 26(b)(3) of the Montana Rules of Civil Procedure, “[o]rdinarily, a party may not discover documents and tangible things that are prepared in anticipation of litigation or for trial by or for another party or its representative (including the other party's attorney, consultant, surety, indemnitor, insurer, or agent).” The only exception to this work-product privilege with respect to expert materials is as provided in Rule 26(b)(4), which allows for “[d]iscovery of facts known and opinions held by experts.” Because Mr. Beach’s expert agreement was prepared in anticipation of litigation and contains information other than “facts known and opinions held” by him, it is not subject to disclosure.

NWE-008 Subject: Communications with Solar Developers in Montana

Provide complete copies of all written communications in the last two years between the Montana Environmental Information Center/Vote Solar (their agents and attorneys, including Mr. Beach), and the following three solar developers in Montana (including their agents and attorneys): Cypress Creek Renewables, FLS, and Pacific Northwest Solar.

Response:

Vote Solar objects to NWE-008 because it is not reasonably calculated to lead to admissible evidence, is overbroad, and seeks privileged information.

Pursuant to Rule 26(b)(1) of the Montana Rules of Civil Procedure, a party may only obtain discovery “relevant to any party’s claim or defense” and that “appears reasonably calculated to lead to the discovery of admissible evidence.” The Commission adopted M. R. Civ. P. 26 in its administrative rules. See ARM 38.2.3301. Discovery is irrelevant if it has “no bearing on [the] legitimate issues” in the docket. Henricksen v. State, 2004 MT 20, ¶ 44, 319 Mont. 307, 84 P.3d 38.

Primarily at issue in this proceeding is the proper calculation of NWE’s avoided costs for purposes of establishing the QF-1 Tariff Rate that applies to certain Qualifying Facilities (“QFs”) that seek to sell electricity to NorthWestern. Under Montana regulations, “[t]he standard rate for purchases from a qualifying facility shall be that rate calculated on the basis of avoided costs to the utility which is determined by the commission to be appropriate for the particular utility after consideration, to the extent practicable, of the avoided cost data submitted to the commission by the utility and other interested persons.” ARM 38.5.1905(4). In addition, the Commission has identified a narrow set of additional issues—all of which pertain to additional terms and conditions in QF-1 contracts—for which the Commission has requested testimony and data request responses from all parties. Parties to this proceeding have conveyed their views on these matters through testimony and data request responses. There is no additional information relevant to this proceeding that NWE might obtain through private communications between co-litigants. Because any communications between Montana Environmental Information Center/Vote Solar and the solar developers have “no bearing on [the] legitimate issues” in the docket, Henricksen, ¶ 44, they are irrelevant and not subject to disclosure under M. R. Civ. P. 26(b)(1).

NorthWestern’s request also is overbroad, as it seeks communications pertaining to any matter whatsoever, and for a period that pre-dated this proceeding.

Furthermore, any such communications are subject to attorney-client privilege by virtue of the “common interest” doctrine. See Am. Zurich Ins. Co. v. Montana Thirteenth Judicial Dist. Court, 2012 MT 61, ¶ 11, 364 Mont. 299, 280 P.3d 240. Under Montana law, “[a]ttorney-client communications may be protected if disclosed to another party where the parties undertake a joint effort with respect to a common legal interest.” Id. (quotation omitted). Here, Vote Solar and Montana Environmental Information Center share common legal interests in ensuring proper implementation of federal and state laws with respect to NWE’s obligation to purchase electricity from QFs. Accordingly, in addition to being irrelevant to the Commission’s legitimate decision-making, any such communications are privileged.

NWE-009 Subject: Calculations and Data Inputs

Please refer to Mr. Beach's testimony at page 12, line 13, through page 15, line 9. Show the derivations of every calculation in this segment of his testimony, including inputs, and provide the original data sources for the inputs. Provide electronic versions, with all formulas intact, of the spreadsheets or similar calculations used for this testimony segment.

Response:

See the "Updated MT Gas Forecast.xlsx" worksheet for the updated natural gas price forecast that is 3% higher than the 2015 IRP forecast on a 25-year levelized basis. See the "MidC Forecast.xlsx" worksheet for the solar-weighted average price equal to 107% of the ATC market price at Mid-C. The data for Exhibit RTB-2 and Table 4 were taken from the Blended Method – ICE tab of the "Revised Exhibit_(JBB-1) D2016.5.39.xlsx" worksheet, using the internal combustion (IC) engine parameters and the Revised MT Gas forecast.

NWE-010 Subject: Calculations and Data Inputs

Please refer to Mr. Beach's testimony at page 19, line 1 through page 28, line 6. Show the derivations of every calculation in this segment of his testimony, including inputs, and provide the original data sources for the inputs. Provide electronic versions, with all formulas intact, of the spreadsheets or similar calculations used for this testimony segment.

Response:

Please refer to the workpapers provided in response to NWE-001.

- The "Updated MT Gas Forecast.xlsx" contains Figure 2.
- The revised 25-year levelized energy prices that are shown in Table 5 are from data response PSC-013 (for the revised LONG-2 condition avoided energy costs) multiplied by the 12.4% increase in levelized natural gas costs compared to those used in NWE's PowerSimm modeling, from the "Updated MT Gas Forecast.xlsx."
- The solar capacity values shown in Table 6 were derived from the worksheet "Solar Exceedance and Capacity Value – Top 10 percent QF peak period.xlsm."
- Figure 3 can be found in the Heat Maps tab of the "Solar Exceedance and Capacity Value - Top 10 percent QF Peak period.xlsx" worksheet.
- Table 7 summarizes the calculations in the box labeled "Peaker Method" in the Blended Method – ICE tab of the "Revised Exhibit_(JBB-1) D2016.5.39.xlsx" worksheet.

NWE-011 Subject: Calculations and Data Inputs.

Please refer to Mr. Beach's testimony at page 34, line 19, through page 37, line 2. Show the derivations of every calculation in this segment of his testimony, including inputs, and provide the original data sources for the inputs. Provide a complete and functional electronic copy of each and every model used to prepare this segment of testimony, and the outputs of every model run, including all measurements of error or accuracy.

Response:

These calculations are in the workpapers provided in response to NWE-01. See the worksheets entitled "Analysis of Montana PCAFs.xlsx" and "Solar Exceedance and Capacity Value – Top 10 percent QF peak period.xlsm" Please note the calculations provided in Table 8 do not have separate workpapers. The table simply multiplies the \$3.16 per kW-month firm transmission rate x 12 months x the 52% of nameplate capacity value determined in the workpapers, and then divides that product by the annual solar output (2,377 kWh per kW-AC) to get a per unit avoided transmission cost.

NWE-012 Subject: Solar specific analysis

Provide all solar specific data in TMY, CSV, or SAM formats, used by Mr. Beach in the preparation of his testimony. For each solar specific model run provide an electronic version of the model, with formulas intact, showing all inputs, outputs, and measurements of error or accuracy.

Response:

The solar specific data is in the workpapers provided in response to NWE-01.

Please note that the SAM model scenario with TMY data was supplied by NWE in response to VS-001b (see “DNV Simulation.sam”), as was the “location and resource” input file to the SAM model (see “lat46.105_lon-112.875_TMY.csv”). We used these files that were provided by NWE to model solar output in 2014-2015. For the years 2010-2013 we substituted year-specific solar insolation data obtained from Solar Anywhere into the TMY data file provided by NWE; these year-specific solar insolation data files from Solar Anywhere are included in the SAM input files provided in response to NWE-01.

CERTIFICATE OF SERVICE

I hereby certify that on the 11th day of November, 2016, I served the foregoing by first-class mail, postage prepaid, and electronic mail on the following:

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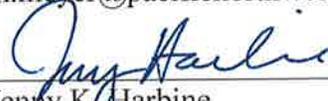
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