

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

IN THE MATTER OF the application of) REGULATORY DIVISION
Montana-Dakota Utilities Company a)
Division Of MDU Resources Group, Inc.,) DOCKET NO. D2015.6.51
for Authority to Establish Increased Rates)
for Electric Service in the State of Montana)

THE ALLIANCE FOR SOLAR CHOICE'S SECOND SET OF
DATA REQUESTS TO MONTANA-DAKOTA UTILITIES CO.

The Alliance for Solar Choice (TASC), by and through its undersigned counsel pursuant to applicable rules of procedure, submits the attached Data Requests to the Montana-Dakota Utilities Co. ("MDU"). The definitions and instructions apply to the attached Data Requests:

RESPONSE DATE, DEFINITIONS AND INSTRUCTIONS

Please respond to these Data Requests within fourteen (14) calendar days, i.e., by October 30, 2015.

INSTRUCTIONS

- A. Please restate the interrogatory immediately preceding each response.
- B. As used herein, the terms "MDU" or "Company" means The Montana-Dakota Utilities Company and any and all of its subsidiaries, parent companies, affiliates, present and former employees, agents, consultants, attorneys, officials, and any and all other persons acting on its behalf.
- C. Identify the name, title and business address of each person(s) providing each response and provide the date on which each response was created. Further, please designate the MDU witness, if any, to cross-examine at the hearing concerning the response. If witnesses have not yet been selected at the time a data response is provided, please supplement the response once witnesses have been selected to provide the requested information.
- D. These requests for documents and responses are continuing in character. The Respondent is obliged to change, supplement and correct all answers to

conform to available information in including such information as first becomes available to the Respondent after the answers hereto are filed. Any supplemental answer should refer to the date and use the number of the original request or subpart thereof.

- E. Unless otherwise indicated, the documents for which production is sought shall include all documents dated, prepared, sent, or received during the designated period.
- F. Whenever these discovery requests specifically request an answer, rather than the identification of documents, an answer is required and the production of documents in lieu thereof will not substitute for an answer.
- H. If information requested is not available in the exact form requested, provide such data or documents as are available and responsive to the particular discovery request.
- J. Any objection to a discovery request should clearly indicate to which part or portion of the discovery request the objection is directed.
- K. For each computer-generated document identified or produced in a response, please state separately: (a) what types of data files are included in the input and the source thereof; (b) the computer program; (c) a description of the recordation system employed (including program description, flow charts, etc.); and, (d) the identification of the person or persons, during the designated period, who were in charge of the collection of input materials, the processing of input materials, the databases utilized, and/or the programming to obtain such output.
- L. If any document described in any request for documents is no longer in your possession or control, state whether it: (a) is missing or lost; (b) has been destroyed; (c) has been transferred voluntarily or involuntarily to others; or (d) has been otherwise disposed of.
- M. If any document, in whole or in part, covered by this request is withheld for whatever reason, please furnish a list identifying all withheld documents in the following manner: (a) a brief description of the document; (b) the date of the document; (c) the name of each author or preparer; (d) the name of each person who received the document; and (e) the reason for withholding it and a statement of facts constituting the justification and basis therefore.
- N. If, in answering any of these discovery requests, there is deemed to be any ambiguity in interpreting either the discovery request or a definition or instruction applicable thereto, please promptly call counsel to TASC to obtain a clarification.

- O. The term “communications” includes all verbal and written communications of every kind, including but not limited to telephone calls, conferences, notes, correspondence, and all memoranda concerning the requested communications.
- P The term “document” shall include, without limitation, all writings and records of every type in your possession, control, or custody. “Documents” shall also refer to copies of documents (even though the originals thereof are not in your possession, custody, or control), every copy of a document which contains handwritten or other notations or which otherwise does not duplicate the originals or any other copy, and all attachments or appendices to any documents.
- Q. “Study,” “studies,” “analyses” or “report(s)” denotes any document, as defined above, which reflects or was utilized in the collection, evaluation, analysis, summarization, or characterization of data in connection with these requests.
- R. Please provide a set of responses via e-mail where appropriate, and via hard copy where appropriate, to:

Electronic copies to:

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DATA REQUESTS

TASC-031 RE: Effect of Rate 92 on Renewable Energy Investment

Please provide all studies, analyses, workpapers, memoranda or other documents prepared by MDU relating to the impact of its proposed Net Metering Rate 92 on customers' decisions to make investments to in customer-sited renewable energy.

TASC-032 RE: Effect of Rate 92 on Renewable Energy Investment

Please provide MDU's forecast of penetration of solar photovoltaics and wind energy systems owned by customers in the residential and commercial sectors (a) under current rate design, and (b) under its proposals for a net metering customer demand charge. Provide supporting analyses and workpapers.

TASC-033 RE: Load Forecast

Please provide MDU's latest load forecasts for the residential and small commercial customer classes and any documentation of those forecasts that MDU prepared. If the forecasts are fully or partially econometric, provide all data, equations, and tests of statistical significance. If the load forecasts and work papers were developed using Excel, provide copies of the Excel workbooks with all formulae and functions active.

TASC-034 RE: Load Growth

In regard to DJN1 Demand and Energy 1985 to 2014.xlsx, describe in detail which customer classes are responsible for what portions of the growth after the year 2000 for:

- a) Requirements
- b) Summer peak Load
- c) Winter Peak load

TASC-035 RE: Metering Requirements for residential customers - Rate 92

In the General Terms and Conditions of The Proposed Rate 92 Tariff the words "For Demand-Metered facilities" are removed from the existing tariff suggesting that residential net metered customers may now be required to have a demand meter.

- a) Please confirm or deny that existing and future residential net meter customers will have to add a demand meter or other non standard metering equipment in order to take service under the proposed Rate 92
- b) State who will pay for any additional metering described in answer to the

- previous question (a).
- c) Provide an estimate of the costs of such metering equipment to residential customers taking service under Rate 92.
 - d) If residential customers are required to pay for additional metering, state how this requirement is consistent with the terms of the Montana Net Metering statute which was adopted to encourage private investment in renewable energy resources and states that a “utility shall allow net metering systems to be interconnected using a standard kilowatt-hour meter capable of registering flow of electricity in two directions” “in accordance with normal metering practices.” Montana Code § 69-8-601, 602 and 603.

TASC-036 RE: Subsidy for customers with behind the meter generation

In regard to Ms. Aberle’s response to TASC data requests 004 and 006, is it MDU’s position that net metering customers do not pay their fair share of “...the standby generation, transmission and distribution investments necessary to serve distributed generation customers.”

TASC-037 RE: Subsidy for customers with behind the meter generation

According to MDU response to PSC-004, the Net Metering customers in Montana, fed almost no “excess generation” into the grid. Rate 10 Customers #1 and #2 fed no energy into the grid over three years; Rate 20 Customer #2 fed less than one percent (0.87%) of the equivalent of their net purchases from MDU into the grid over the three-year period. Rate 20 Customer #1 fed the equivalent of 1.7 percent of its net purchases from MDU into the grid. The total “payment” all of these four net metering customers “received” from MDU for energy fed into the grid over those three years was \$73.98, about 51 cents per customer per month. Is this amount the “subsidy” that is referred to in Ms. Aberle’s testimony?

TASC-038 RE: Estimating monthly demand from the AMR data for residential customers

In response to TASC-018 MDU stated that the “94 percent of the customers in Montana are network AMR customers with the capability of producing 5 minute data on an hourly basis.”

- a. In MDU’s response to PSC-005(a), Attachment A, the impact of the proposed demand charge on the two residential net metering customers that MDU has in Montana was estimated. Please explain how the monthly demand for these two customers was estimated given that they did not have demand meters. Provide work papers.

b. In MDU's response to PSC-005(c), MDU states that "Montana-Dakota is proposing to utilize network data available through the current automated meter reading system [for demand billing determinants] for the net metering residential customers." Please explain how demand billing determinants would be obtained from this AMR energy usage information.

TASC-039 RE: MDU's proposal for metering residential net metering customers

In response to TASC-018, MDU states that: "Under the Company's proposal demand meters registering 15 minute data each month would be used for billing purposes." In response to TASC-005(c) these demand meters were characterized as follows: "For demand metering, a more complex meter is required and would raise the installed cost to about \$270 [compared to a traditional residential, kWh only, meter, costing \$88].

Also in response to PSC-005(c) MDU states that "Montana-Dakota is proposing to utilize network data available through the current automated meter reading system [for demand billing determinants] for the net metering residential customers." "

Please explain these apparent contradictory assertions about how residential net metering customers would be metered to obtain demand billing determinants.

TASC-040 RE: The tariff applicable to residential customers installing renewable electric generating equipment to serve part of their load.

In response to TASC-020 MDU stated that "The demand charge is proposed to be applicable to customers choosing the net metering option and therefore not automatically applicable to all customers that install renewable energy generation behind-the-meter."

The Net Metering Service Rate 92 tariff sheet (1st Revised Sheet No. 44) says that Net Metering Service is available to customers who owns, and/or, operates...renewable energy sources...that is intended primarily to offset part or all of the customer's own electrical requirements. The generating facility...must be interconnected and operated in parallel with the Company's existing distribution facilities."

a. Is it MDU's position that a customer with renewable energy generating equipment behind the meter can operate that equipment to offset part or all of the customer's own electrical requirements under the standard residential or small general service tariffs?

b. Is Net Metering Service Rate 92 a voluntary option for customers who want the option of feeding renewable electric generation in excess of the customer's needs

into the grid so that that excess generation can be used to offset future electricity taken from the grid?

c. Would MDU seek to impose any other limits or charges on self-generating residential or small general service customers who did not wish credit for generation in excess of their own electrical usage?

TASC-041 RE: Explanation of the classification of poles, conductors, and conduit between customer and demand related functions.

Statement L, tab “distribution plant,” provides calculations on the “Distribution Plant Allocation.” Cell C18 has a note on it saying “Split comes from Distribution-Engineering Worksheet.” It is not clear that such a worksheet is contained in Statement L. Please indicate where this worksheet can be found or supply it with all Excel formulae and links active and accessible.

TASC-042 RE: Minimum system calculations of customer and demand components of distribution system costs.

In the Marginal Cost of Service Study (Exhibit SJC1-SJC11) marginal distribution capacity costs are calculated using a Minimum System approach. On the Distribution-Capacity Related tab, the minimum pole and conductor costs are displayed (cells C38-F48).

Please indicate the design capacity for each element of both the minimum and normal systems (Pole, Overhead Conductor, and URD Conductor). That is, what is the upper limit of the normal design capacity of each element of the two distribution systems.

TASC-043 RE: The allocation of the fixed costs associated with production and transmission.

a. Is it true that Production and Transmission Plant, Accumulated Depreciation, and Expenses (less fuel and purchased power costs) are allocated to customer classes on the basis of Average and Excess Demand (Allocation Factor 2)? If the answer in “no,” please explain how those production and transmission costs are allocated to customer classes.

b. Is it true that MDU’s cost of service for the Residential Class includes the following demand-related costs:

Production & Transmission Demand	\$ 9,181,111
Distribution Demand	\$ 1,017,712
Total Demand Related Costs	\$10,198,823

(Statement L Embedded Cost of Ser Analysis, Cost by Component, cells C28 to D28.)

If the answer is “no,” please explain what the demand allocations to the residential class in the cost of service analysis are and where they are located in Statement L.

c. Is it true that the Residential Class allocation of Production and Transmission Demand cost was based on the Average and Excess Demand Allocator? If the answer is “no,” please explain what allocator was used and where it is found in Statement L.

d. Do you agree that the Average and Excess Demand Allocator allocates part of the coincident peak responsibility on the basis of class contribution to average demand (or energy) and part on the basis of class contribution to total non-coincident peak excess demand? If not, please explain what part of this characterization of the Average and Excess Demand allocator you disagree with.

e. Do you agree that the demand charge calculated for the net metering residential customers was based on calculating a demand charge that would collect all of the residential demand-related costs including production and transmission costs? (Rate 92 Demand.xlsx, Demand Component Residential Service Under Rate 92”, tab Rate 92 Res Demand, line 16) If the answer is “no,” please explain what costs would be the basis of that demand charge.

f. Do you agree that the weight placed on average demand or energy in MDU’s Average and Excess Demand allocation is approximately 76 percent, the MDU Montana system load factor, and that the weight placed on the excess demand is about 24 percent? (Statement L, tab “demand & energy-AED,” J56/D60) If the answer is “no,” please explain and provide the system coincident load factor used in the Average and Excess Demand allocation.

TASC-044 RE: Characterization of MDU’s allocation of fixed production and transmission costs to the residential class.

In MDU’s response to TASC-015, MDU states that “customer conservation efforts through permanent changes like improved buildings and structures have the potential to reduce demand. While both [customer conservation and customer renewable generation] may result in some short term losses because revenue under both situations is decreased, in the long term, upgrades that decrease the demand on the system will reduce costs.”

a. If a customer-owned renewable generation facility was shown to reduce the demand on MDU’s system, would that customer also “decrease the demand on the system” and, “in the long term,” “reduce costs.” If the answer is “no,” please explain.

b. Are part of the “long term” “reduced costs” associated with demand reductions on MDU’s system reductions in the fixed costs of production and transmission? If the answer is “no,” please explain.

c. Given that the Average and Excess Demand allocator allocates fixed production and transmission costs to customer classes heavily (76 percent) on the basis of energy consumption, please explain why it would not be appropriate to collect only the excess demand portion of the fixed production and transmission costs allocated to the residential class when calculating a residential demand charge (Rate 92 Demand.xlsx).

TASC-045 RE: Explanation of MDU’s response to TASC-004.

a. There appears to be some words missing from MDU’s response to TASC-004. The response appears to jump from commenting on net metering customers being paid the retail rate for energy generated above their use to a mention of the “standby generation, transmission, and distribution investments necessary to serve distributed generation customers.” Could you please clarify or rephrase this response?

b. If the “subsidy” associated with net metering customers is the payment of the retail rate for generation in excess a customer’s needs, does that mean that it is MDU’s position that customers whose self-generation rarely if ever exceeds their own use do not receive a “subsidy”? Please explain.

c. Can MDU confirm that its two residential net metering customers in Montana never produce electricity that exceeded their own use, i.e. MDU response to PSC-004(b) (Attachment A, pp. 1-2) shows that Residential Rate 10 customers #1 and #2 never generated electricity in excess of their own use over the three years reported.

TASC-046 RE: Peak demand hours

Please describe which hours of the day MDU’s system typically reaches its peak demand during summer and winter

TASC-047 RE: Residential Frequency Analysis

Please provide residential frequency analyses for (a) the average annual kWh consumed, (b) the monthly maximum kWh consumed, (c) the average annual residential bill, and (d) the monthly maximum residential bill, as well as the calendar year for which this data is available.

TASC-048

RE: Benefits and costs of distributed renewable generation

Please state whether Ms. Aberle reviewed any of the following studies prior to the filing of the current MDU rate case. If she did review any of these or similar studies, please identify those that she did review.

Study	Funded / Commissioned by	Prepared by
Xcel Energy, Inc. Costs and Benefits of Distributed Solar Generation on the Public Service Company of Colorado System. May 2013.	Xcel Energy	Xcel Energy
SAIC. 2013 Updated Solar PV Value Report. Arizona Public Service. May, 2013.	Arizona Public Service	SAIC
Beach, R., McGuire, P., The Benefits and Costs of Solar Distributed Generation for Arizona Public Service. Crossborder Energy May, 2013.		Crossborder Energy
Norris, B., Jones, N. <i>The Value of Distributed Solar Electric Generation to San Antonio</i> . Clean Power Research & Solar San Antonio, March 2013.	DOE Sunshot Initiative	Clean Power Research & Solar San Antonio
Beach, R., McGuire, P., <i>Evaluating the Benefits and Costs of Net Energy Metering for Residential Customers in California</i> . Crossborder Energy, Jan. 2013.	Vote Solar Initiative	Crossborder Energy
Rabago, K., Norris, B., Hoff, T., <i>Designing Austin Energy's Solar Tariff Using A Distributed PV Calculator</i> . Clean Power Research & Austin Energy, 2012.	Austin Energy	Clean Power Research & Austin Energy
Perez, R., Norris, B., Hoff, T., <i>The Value of Distributed Solar Electric Generation to New Jersey and Pennsylvania</i> . Clean Power Research, 2012.	The Mid-Atlantic Solar Energy Industries Association, & The Pennsylvania Solar Energy Industries Association	Clean Power Research
Mills, A., Wiser, R., <i>Changes in the Economic Value of Variable Generation at High Penetration Levels: A Pilot Case Study of California</i> . Lawrence Berkeley National Laboratory, June 2012.	DOE Office of Energy Efficiency and Renewable Energy and Office of Electricity Delivery and Energy Reliability	Lawrence Berkeley National Laboratory
Energy and Environmental Economics, Inc. Technical Potential for Local Distributed Photovoltaics in California. Preliminary Assessment. March 2012.	California Public Utilities Commission	Energy and Environmental Economics, Inc. (E3)
Energy and Environmental Economics, Inc. California Solar Initiative Cost-Effectiveness Evaluation. April 2011.	California Public Utilities Commission	Energy and Environmental Economics, Inc. (E3)
R.W. Beck, Arizona Public Service, <i>Distributed Renewable Energy Operating Impacts and Valuation Study</i> . Jan. 2009.	Arizona Public Service	R.W. Beck, Inc with Energized Solutions, LLC, Phasor Energy Company, Inc, & Summit Blue Consulting, LLC
Perez, R., Hoff, T., Energy and Capacity Valuation of Photovoltaic Power Generation in New York. Clean Power Research, March 2008.	Solar Alliance and the New York Solar Energy Industry Association	
Contreras, J.L., Frantzie, L., Blazewicz, S., Pinault, D., Sawyer, H., <i>Photovoltaics Value Analysis</i> . Navigant Consulting, Feb, 2008.	National Renewable Energy Laboratory	Navigant Consulting, Inc.
Hoff, T., Perez, R., Braun, G., Kuhn, M., Norris, B., <i>The Value of Distributed Photovoltaics to Austin Energy and the City of Austin</i> . Clean Power Research, March 2006.	Austin Energy	Clean Power Research
Smeloff, E., <i>Quantifying the Benefits of Solar Power for California</i> . Vote Solar, Jan. 2005.	Vote Solar Initiative	Ed Smeloff
Duke, R., Williams, R., Payne A., <i>Accelerating Residential PV Expansion: Demand Analysis for Competitive Electricity Markets</i> . Energy Policy 33, 2005. pp. 1912-1929.	EPA STAR Fellowship, the Energy Foundation, The Packard Foundation, NSF	Princeton Environmental Institute, Princeton University

CERTIFICATE OF SERVICE

I hereby certify that on this, the 16th day of October, 2015 **THE ALLIANCE FOR SOLAR CHOICE'S SECOND SET OF DATA REQUESTS TO MONTANA-DAKOTA UTILITIES CO.** was e-filed with the Commission and served via U.S. Mail and email, unless otherwise noted, to the following:

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Dated: October 16, 2015 at Cary, North Carolina.

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