minnesota power
AN ALLETE COMPANY

June 1, 2017

VIA ELECTRONIC FILING
Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of Minnesota Power's Annual Report
On Progress in Achieving the Solar Energy Standard
Docket No. E999/M-17-283

Dear Mr. Wolf:

In accordance with the Minnesota Public Utilities Commission's April 25, 2014 Order Clarifying Solar Energy Standard Requirements and Setting Annual Reporting Requirements in Docket Number E-999/CI-13-542, please find enclosed for filing Minnesota Power's 2016 Solar Energy Standard Progress Report.

Please contact me at the phone number or email address above if you have any questions regarding this filing.

Respectfully,

Jennifer J. Peterson
Policy Manager
Minnesota Power

JJP:sr
Attach.

Solar Energy Standard Annual Report

Due:	June 1, 2017
Reporting period:	January 1, 2016 – December 31, 2016
Statute/Rule reference:	216B.1691 Subd. 2f(g). (g) Beginning July 1, 2014, and each July 1[1] through 2020, each public utility shall file a report with the commission reporting its progress in achieving the solar energy standard established under this subdivision. Order, issued April 25 in Docket No. E-999/CI-13-542 Order, issued October 23, 2014 in Docket No. E-999/M-14-321 Order, issued November 28, 2016 in Docket No. E-999/M-16-342
Comments:	Please answer questions below and eFile as a PDF

Report Year	2016
Date Submitted	June 1, 2017
Filing Utility Information	
Company ID#	
Company Name	Minnesota Power
Street Address Line 1	30 W Superior Street
Street Address Line 2	
City	Duluth
State	MN
Zip Code	55802
Contact Information	
Contact Name	Jennifer J. Peterson
Contact Title	Policy Manager
Contact Telephone	218-355-3202
Contact Email	jjpeterson@mnpower.com
Comments/Notes	
Please see additional details on Minnesota Power's solar activities in the following pages.	

[1] SES compliance reporting requirements are set forth in Commission orders from April 25, 2014 and October 23, 2014 in Docket No. E999/CI-13-542. Annual reports are due by June 1st each year.

1. **Summary of ongoing efforts to obtain solar energy (including a brief summary of the anticipated mix of project sizes for SES compliance)**
   Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 4.H
   More detailed information on each utility's ongoing efforts to obtain solar energy on their systems.
   Docket Nos. E999/CI-13-542, E999/M-14-321, Commission Order (October 23, 2014), Order Point 2.c
   Consistent with what was reported in last year's 2015 SES Progress Report, Minnesota Power intends to meet its 2020 SES compliance requirements with banked SRECs and approximately 23 MW of installed solar capacity. This 23 MW of installed capacity is expected to come from about 20 MW of utility scale solar and 3 MW of community and customer-sited solar projects. The Company expects the combination of banked SRECs and installed capacity will allow Minnesota Power to meet and exceed SREC requirements in 2021, 2022, and 2023. Should there be any SREC deficits, those deficits are assumed to be met with SREC purchases in that particular year so no negative balance is carried into the following year. Please see a more detailed description of current projects and efforts in the following pages.

2. **Progress towards the 10% carve out for systems less than 20 kW, including whether they plan to meet it through customer sited generation or SREC purchases.**
   Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 4.I

   Minnesota Power is continuing its longstanding support of customer-sited solar systems with its SolarSense rebate program, which has been in place for over a decade. In 2016, Minnesota Power proposed to expand the SolarSense program by nearly tripling the amount of incentives available for customer-sited solar installations from 2017-2019. This newly proposed program expansion was approved in early 2017[2] and was designed to incentivize enough solar for the Company to meet its small scale solar requirements under the SES by 2020 through customer-sited solar installations.

3. **Discussion on challenges in registering small solar facilities in M-RETS**
   Docket Nos. E999/CI-13-542, E999/M-14-321, Commission Order (October 23, 2014), Order Point 2.e
   M-RETS now has established processes for utilities to register SES-eligible SRECs associated with small solar facilities and Minnesota Power is currently not experiencing any challenges with SREC registration.

4. **Brief summary of the state(s) in which the solar generation is located or anticipated to be located**
   Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 4.J
   The planning process is underway to identify future locations and applications for solar generation in Minnesota Power's service territory. At this time, Minnesota Power does not anticipate generating solar energy outside of Minnesota. However, evaluation of solar opportunities is ongoing at the Company as the technology advances and economics improve.

5. **Discussion of how utilities plan to use the current solar investment tax credit benefits to lower solar costs, and if not, why they believe that waiting may reduce the costs of adding solar resources. Include details on the risks of higher compliance costs to customers if solar prices were not to fall and the ITC expires, and the uncertainty of Midwest SREC market prices and availability if procurement was necessary for compliance with the Standard.**
   Docket Nos. E999/CI-13-542, E999/M-14-321, Commission Order (October 23, 2014), Order Point 2.f
   In September 2015, the Company filed its Integrated Resource Plan[3] ("IRP") which includes a short term action plan during the five year period of 2015-2019. Through that docket, Minnesota Power noted that adding new solar generation beyond the Company's current SES strategy was shown as a less cost-effective resource alternative for customers. The solar generation characteristics do not align well with

[2] Docket No. E015/M-16-485.
[3] Docket No. E015/RP-15-690.

the energy needs of the Company's customer mix as Minnesota Power has a high load factor due to the large concentration of industrial load on its system that requires energy around the clock. The Company also has a winter peak that normally occurs during the late evening when the sun is not available, which limits the economic benefit of solar generation following demand peak hours to only the summer months when Minnesota Power's peak demand characteristics are more aligned with neighboring utilities.

Minnesota Power recognizes that solar technology is continuing to become more efficient and costs are declining. In the IRP analysis process, adding utility scale solar in the short-term action plan period (2015-2019) was not beneficial to customers at the current cost outlooks. Minnesota Power will continue to evaluate new solar technology trends in future resource plans to identify when it would be beneficial to customers to augment the power supply with additional utility scale solar beyond what is required to comply with the SES. However, early action and use of SREC banking can provide flexibility to meet the SES while adding solar to the Company's resource mix in a cost-effective way for customers.

The Company has taken a phased approach in solar deployment to mitigate the risks associated with too much generation built at higher price points - whether that is early action before panel prices decline or later action when tax credits may not be available. Minnesota Power endeavors to deliver solar energy at the best cost to customers, and the innovative leasing agreement with a financial institution for the 10 MW Camp Ripley Solar Project is an example of how the Company was able to monetize tax benefits and pass those savings on to customers, even while Minnesota Power itself has a limited tax appetite.

6. Discussion on the utilities' efforts to reach, by 2030, the energy goal that ten percent of the retail electric sales in Minnesota be generated by solar energy.

Docket Nos. E999/CI-13-542, E999/M-16-342, Commission Order (November 28, 2016)

Minnesota Power is an active participant and Technical Committee member for the MN Solar Pathways Initiative that began in 2017. MN Solar Pathways was created to help realize Minnesota's goal of generating 10 percent of its electricity from solar by 2030. Over the span of three years, from 2017 to 2020, the project will combine an inclusive stakeholder engagement process with technical analysis in order to identify strategies for achieving this goal.

The Minnesota Department of Commerce applied for and was awarded a $2 million grant from the U.S. Department of Energy Sunshot Initiative to support MN Solar Pathways. The Department of Commerce is leading a team of core project partners and will engage stakeholders from the energy and solar industries and market participants to identify different solar value propositions, solar deployment opportunities and critical actions to achieve deployment strategies. The project will engage in a wide range of activities with these stakeholders to identify and demonstrate least-cost, best-value strategies for Minnesota to achieve its solar energy goals. This includes the potential of key technologies and management approaches to overcome grid integration challenges with increased solar. Minnesota Power looks forward to its participation in this initiative to develop responsible strategies to meet the state's policy goal of 10 percent solar by 2030. For more information on MN Solar Pathways please visit: http://www.betterenergy.org/projects/mn-solar-pathways

7. Any additional comments or materials the utility may wish to include.

More information on Minnesota Power's solar strategy and activities is included in the following pages.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Utilities' Annual Reports on Progress In Achieving the Solar Energy Standard	Docket No. E999/M-17-283 **MINNESOTA POWER'S 2016 PROGRESS REPORT**

I. INTRODUCTION

During the 2013 legislative session, Minn. Stat. § 216B.1691, the statute establishing Minnesota's Renewable Energy Standard ("RES"), was amended to include an additional Solar Energy Standard ("SES"). The SES requires 1.5 percent of a public utility's retail sales, net of customer exclusions, to be served by solar energy resources by 2020. Of the 1.5 percent SES, at least 10 percent must come from solar energy generated by or procured from solar photovoltaic ("PV") devices with a nameplate capacity of 20 kilowatts ("kW") or less. Minn. Stat. § 216B.1691, subd. 2f requires each public utility to file an annual report with the Commission outlining its progress in achieving the SES.

On November 28, 2016, the Minnesota Public Utilities Commission ("Commission" or "MPUC") issued an Order Accepting the 2015 Solar Energy Standard Reports.[4] Minnesota Power (or the "Company") respectfully submits its 2016 Annual Progress Report in Achieving the SES. Through this Report, the Company outlines its 2016 efforts in positioning itself for a balanced approach to be compliant with the SES in 2020 and beyond. In 2016, Minnesota Power's first utility scale solar project, a 10 MW array at Camp Ripley in Little Falls, MN, became operational. The Camp Ripley Solar Project is the largest solar array on any National Guard military base in the nation and represents nearly one third of the solar energy needed for Minnesota Power to meet its SES requirements.[5] The Company's first Community Solar Garden Pilot Program was approved in 2016 and will be producing solar energy for participating customers in 2017.[6] Finally, the Company continued its longstanding support of customer-sited solar systems with its SolarSense rebate program, which has been in place for over a decade. In 2016, Minnesota Power proposed to expand the SolarSense program by nearly tripling the amount of incentives available for customer-sited solar installations. This newly proposed program expansion was approved in early 2017.[7] With proactive action in each pillar of the Company's solar strategy - Utility, Community and Customer - Minnesota Power is well-positioned for compliance with its SES requirements in 2020.

II. CUSTOMER, COMMUNITY, AND UTILITY PILLARS OF MINNESOTA POWER'S SOLAR STRATEGY

Minnesota Power is pursuing solar energy resources that are consistent with its current *Energy***Forward** resource strategy, which is designed to deliver safe and reliable service to customers while protecting and improving the region's quality of life and preserving the affordability of electricity.

[4] Docket No. E-999/M-16-342 or Docket No. E-999/CI-13-542. MPUC Order Dated October November 28, 2016.
[5] Docket No. E015/M-15-773.
[6] Docket No. E015/M-15-825.
[7] Docket No. E015/M-16-485

The implementation of Minnesota Power's solar energy strategy will take into consideration customer outlooks, technology advancements, consumer trends and reasonable implementation costs. Utilizing each of the three pillars of focus – Customer, Community and Utility – will enable Minnesota Power to be more flexible with its implementation plans and create a diverse approach to integrating solar energy into its power supply portfolio, which is consistent with Minnesota Power's broader resource planning principles. Minnesota Power will continue to evolve this outlook while working closely with stakeholders to ensure reasonable cost and reliability are maintained. Throughout this section, Minnesota Power will outline the efforts that support each pillar of the Company's Solar Strategy: Customer, Community and Utility.

A. Utility Pillar

Containing the largest quantity of solar energy, the Utility pillar of Minnesota Power's solar strategy is able to leverage economies of scale with each deployment and typically has access to the lowest cost solar resource for customers. Minnesota Power has determined principles for embarking on large scale solar that include: 1) ensuring underutilized land is given priority to carefully manage Minnesota's natural resource based economies, 2) diversify locations of solar projects within the service territory footprint, and 3) work with partners to achieve multiple business, community, and customer objectives. These principles, along with searching for reasonable cost solutions, will position Minnesota Power for a successful SES implementation.

The Camp Ripley Solar Project

In 2016, Minnesota Power completed its first large scale solar project at the Camp Ripley Army National Guard Base near Little Falls, MN. The 10 MW solar array, which was completed under budget, went in service in November 2016 and is now expected to produce nearly one third of the energy required for the Company to meet the SES.[8] Site restoration of the nearly 80 acres of land used by the Camp Ripley Solar Project included native pollinator-friendly plant species.

The Next Utility Scale Solar Project

In the Commission's July 18, 2016 Order Approving Minnesota Power's Integrated Resource Plan ("IRP") with Modifications, the Company was required to add 11 MW of solar by 2016, 12 MW of solar by 2020, and a final 10 MW of solar by 2025 to meet its SES obligations. The Commission also noted that it found up to 100 MW of solar by 2022 potentially an economic resource for Minnesota Power's system, and ordered the Company to address the economic feasibility of more solar in any additional competitive acquisition processes.

Minnesota Power is compliant with the 11 MW of solar by 2016 requirement through the operational 10 MW Camp Ripley Solar Project and the 1 MW Community Solar Garden array currently under contract. As the Company prepares for its next solar resource addition, a competitive bidding process for up to 300 MW of utility scale solar was initiated in July 2016. Minnesota Power is evaluating the responses to its Request for Proposals and negotiating with potential counterparties. The Company is in the process of entering into agreements for it next utility scale solar project, well ahead of the 2020 benchmark established in its last IRP Order.

[8] Docket No. E015/M-15-773.

B. Community Pillar

Minnesota Power is taking a comprehensive approach to meeting the SES, particularly the small scale requirement, and is providing customers that are not able to install a solar PV system on their home or business with the ability to participate in solar energy. The Company continues to explore opportunities to educate customers, engage communities and work with stakeholders to raise awareness about solar energy and encourage solar PV adoption throughout Minnesota Power's service territory.

Minnesota Power's Community Solar Garden Pilot Program

In September 2015, the Company filed a proposed Community Solar Garden Pilot Program ("CSG Pilot Program") and received final approval of the program, tariff sheets and customer contracts on April 21, 2017.[9] The CSG Pilot Program will consist of the combination of a 1MW and 40kW solar array and will be the first solar garden in northeastern Minnesota. Minnesota Power expects final construction of the 1MW array to be complete and subscribing customers to start receiving solar energy bill credits in 2017. As stated in last year's progress report, community offerings are an important part of the Company's overall solar strategy, and Minnesota Power has conducted extensive research to develop a thoughtful program focused on its customers. The CSG Pilot Program will provide customers with a streamlined experience, consumer protections, increased optionality and a market-based approach to the pricing structure. There are currently over 300 individuals on the Company's CSG Pilot Program interest list, and the conversion rate of customers on the interest list who subscribe to the program will be tracked in future SES progress reports.

Minnesota Power's CSG Pilot Program offers three convenient ways for customers to participate: a one-time upfront payment option, a fixed monthly subscription fee or a per-kWh charge (also commonly referred to as "pay-as-you-go"). Minnesota Power intends to scale the program based upon customer demand and has developed a thorough set of evaluation criteria to help ensure successful development and launching of future community solar offerings. The Company believes pilot projects are critical tools to test customer preferences and for utilities to offer new products and services that their customers desire. Piloting a program can provide for learning, program adjustments, alignment with customer expectations, and process refinements before broader implementations occur. Site restoration at Minnesota Power's 40 kW solar array will utilize native pollinator-friendly plant species.

Solar Market Pathways

Minnesota Power is participating in the Solar Market Pathways initiative, a cross-functional team led by Ecolibrium3, a local nonprofit agency whose mission is to lead community change toward a sustainable future. Solar Market Pathways is funded by a grant award from the U.S. Department of Energy's Sunshot Initiative. The project focuses on reducing the soft costs of solar PV through community policy implementation and the development of simplified processes for permitting and interconnection.[10] The project, beginning in 2014, has an established target of 1 MW of capacity in Duluth, MN through residential rooftop and community solar with a cost reduction goal of 50%. For more information, visit Ecolibrium3's website at http://www.ecolibrium3.org/

[9] Docket No. E015/M-15/825.

[10] The U.S. Department of Energy's SunShot Initiative defines solar soft costs as non-hardware costs related to installing solar, including financing, customer acquisition, permitting, installation, labor and inspection.

C. **Customer Pillar**

Minnesota Power has provided customers with tools and resources to make informed decisions about their investments in renewable energy for over a decade. Installing a solar PV system requires collaboration between many different parties including customers, solar installers, inspectors, building and city officials, the utility and more. There are numerous components to a successful solar installation, the most important of which is the customer experience.

In an effort to enhance the customer experience and encourage growth in the solar market in northern Minnesota, the Company believes that a market-building approach to renewable programs is necessary. Minnesota Power's recently approved SolarSense Customer Solar Program includes a balanced offering of customer rebates, low income customer offerings, research and development and informational resources. Coordinating these programmatic elements into a portfolio-based solar program will allow Minnesota Power to help enhance the experience for customers pursuing solar.

Minnesota Power's SolarSense Rebate Program

The Customer Renewable Energy ("RE") program has been offered through Minnesota Power's comprehensive CIP portfolio since 2004 and has provided rebates to help customers adopt renewable energy technologies. Continually modifying and expanding the program by connecting and collaborating with a variety of stakeholders and trade allies over the last several years has been instrumental in the pursuit of the shared goal of expanding the availability and customer adoption of renewable energy technologies.

In 2016, Minnesota Power continued to administer the SolarSense program with modifications introduced in 2015, including a lottery process to award rebate funds, maximizing the amount of incentives available to customers by eliminating administration costs in the program and introducing a solar renewable energy credit contract for compliance with the SES. These changes are critical in helping the Company understand and monitor the pent-up demand for renewable energy rebates in northeastern Minnesota and aligning the SolarSense program with additional offerings in the state, such as the Made in Minnesota incentive program. In addition to the program modifications introduced in 2015, the rebate amount was also slightly decreased in 2016 to allow the rebate dollars to reach more customers.

The program was fully subscribed in 2016 with rebates awarded to 17 customers, representing a total of $138,490 in customer rebates.[11] Minnesota Power continued to gather valuable market intelligence in 2016 that will be instrumental in implementation of the expanded SolarSense Customer Solar Program.

Minnesota Power's Newly Proposed SolarSense Customer Program

Minnesota Power filed its request to expand the SolarSense Customer Solar Program with the Minnesota Public Utilities Commission on June 1, 2016. The filing outlined the Company's proposed customer solar programs including a portfolio of incentives, education and outreach, research and development and more. The MPUC unanimously approved the proposal on January 19, 2017, with the

[11] Docket No. E015/CIP-13-409.03

exception of its request to relocate the Made in Minnesota incentive assessment from CIP to the Solar Factor within the Renewable Resources Rider and a budget for solar education and outreach.[12]

Minnesota Power launched the expanded SolarSense program in the first quarter of 2017 and saw higher than anticipated participation rates. At the time of this filing, the customer rebates for the 2017 calendar year are fully exhausted. The Company will plan to evaluate lessons learned from the first year of the expanded SolarSense program to ensure that the program is responsive to the market and continues to meet customer needs. Any program modifications will be detailed in the Company's 2017 Solar Energy Standard Progress Report, to be filed by June 1, 2018.

Solar Energy Analysis Pilot Program

Minnesota Power's Solar Energy Analysis ("SEA") Pilot Program, which does not charge a customer fee to participate, helps customers determine if solar energy is the right fit for their home or business. During an SEA, a Minnesota Power representative consults with interested customers, visits their site to analyze how solar may benefit them, and identifies site-specific conditions that may affect a potential installation. A summary of findings is then shared with the customer and they are encouraged to share the information when searching for or working with a solar installer.

Based on feedback from customers who had previously participated in the SEA program, Minnesota Power introduced a shortened SEA in 2016. The shortened SEA includes a telephone call with the customer to discuss energy usage information, potential solar PV system sizing, interconnection process guidance, general installation cost information and more. Based on the outcome of the telephone call, the customer and Minnesota Power will determine if a site visit is necessary. This has allowed Minnesota Power to reduce the turnaround time from initial contact to providing the customer with a summary of findings, decreasing the program cost and increasing the program efficiency.

Minnesota Power conducted SEAs for 18 customers in 2016, four of which have submitted interconnection applications in 2017. The Company continues to view this program as an opportunity to engage with customers about solar energy and the interconnection process, and sees potential for this program to reduce the soft costs of installing solar by enhancing the customer acquisition process.

III. SOLAR EDUCATION AND OUTREACH

Education and outreach are critical efforts in ensuring successful compliance with the SES, particularly with the Small Scale Carve-Out requirement, and promoting the deployment of solar energy more broadly. Minnesota Power's experience is that it is important to engage customers about renewable energy applications in northeastern Minnesota and provide opportunities to educate customers about solar programs available to them. This section details the Company's efforts to provide solar-focused education and outreach to both customers and Minnesota Power employees, noting that funding for a dedicated SolarSense education and outreach budget was denied in the Commission's January 19, 2017 Order.

[12] Docket No. E015/M-16-485

Informational Tools and Resources

In an effort to provide customers with straightforward, easy to understand information, the Company created tools and resources, including a *Consumer Guide to Solar Power*. These tools are meant to help customers understand different types of solar PV systems and components, the importance of the grid, net energy metering, incentives, tax credits, and more. These tools are available on Minnesota Power's website at http://www.mnpower.com/Solar

Energy Design Conference & Expo

Renewable energy is a common theme at the annual Energy Design Conference & Expo ("EDC"). The agenda regularly includes an opportunity for attendees to participate in a full day of solar education with a focus on proper installation and design of solar energy systems. In addition to solar presentations offered by a diverse group of renewable energy experts, the EDC Exhibit Hall provides opportunities to connect with a wide variety of renewable energy companies and is open to the public. For more information about Minnesota Power's Energy Design Conference & Expo, visit www.duluthenergydesign.com

Harvest Festival

Minnesota Power worked with partners including the Minnesota Department of Commerce, Comfort Systems, Ecolibrium3, the Midwest Renewable Energy Association, the Minnesota Renewable Energy Society and Clean Energy Resource Teams to organize the energy tent at the 2016 Lake Superior Harvest Festival in Duluth. The energy tent provided an opportunity for Minnesota Power to engage the community and raise awareness of energy efficiency and renewable energy. Minnesota Power's booth offered festival attendees information about the SolarSense rebate program, the Solar Energy Analysis Pilot Program and the Community Solar Garden Pilot Program.

UMD Solar Summit

The University of Minnesota Duluth ("UMD") hosted a student-led forum exploring the feasibility of solar installations on campus. Minnesota Power participated in the Solar Summit, providing programmatic and technical expertise. The UMD Solar Summit represented an opportunity to engage with students about renewable energy while also helping the University explore options for an on-campus solar installation.

Community Events

In addition to the events above, Minnesota Power participated in a number of community events throughout the year. These events offer an opportunity for Minnesota Power employees to connect with customers to discuss Minnesota Power's renewable programs, including the SolarSense rebate program, Community Solar Garden Pilot Program, interconnection process and more.

IV. LOOKING FORWARD

As Minnesota Power looks forward to future solar development activities, there are two key issues on the immediate horizon: cost recovery for solar expenses and co-investing with customers. Since several categories of customers are statutorily exempt from paying for costs associated with the SES, Minnesota Power has proposed, and the Commission has approved, a solar cost recovery rider to

ensure appropriate cost allocation. The Company has yet to submit a solar cost recovery factor filing, but will do so as it continues to accrue costs associated with solar development. Additionally, as the Company continues to work with customers who are also interested in investing in solar energy projects, but have their own sustainability goals, the issue of SREC ownership presents a barrier to collaboration that Minnesota Power continues to attempt to overcome.

Cost Recovery for Solar Expenses - Time of Generation Allocation Implementation

Minn. Stat. § 216B.1691, subd 2f(d) excludes recovery of SES costs from certain customers, namely large iron mining and paper production businesses. In 2015, Minnesota Power proposed a method to meet this requirement in its Camp Ripley Solar Project Filing.[13] In its February 24, 2016 Order at Point 11, the Commission determined:

> As part of its Solar Energy Standard annual status report, Minnesota Power shall include all relevant information, including but not limited to the total costs that have been apportioned to and recovered from solar-paying (nonexempt) customers under Minn. Stat. § 216B.1691, subd. 2f(d), that would have been recovered from exempt customers.

Cost Allocation Methodology

In the February 24 Order, the Commission approved the Company's general approach to allocate costs to customers by creating a new Rider for Solar Energy Adjustment ("SEA Rider"), in conjunction with the Company's existing Rider for Fuel and Purchased Energy Adjustment ("FPE Rider"), and a new Solar Renewable Factor as part of the Company's Renewable Resources Rider.

Minnesota Power currently recovers fuel and purchased power costs through its FPE Rider, which is charged on the firm energy of all its retail customers, including solar-exempt customers. To ensure that the costs of SES compliance are allocated only to solar-paying customers, costs to meet the SES will be removed from the FPE Rider and recovered instead through the SEA Rider, which applies only to solar-paying customers. Solar costs which do not flow through the FPE Rider (such as costs associated with owning and operating a solar facility) will be recovered through the new Solar Renewable Factor, which will similarly only be applied to solar-paying customers.

In an Order dated December 12, 2016, the Commission approved the Company's methodology for calculating the SEA Rider, finding that it will appropriately allocate the costs and benefits of solar power between solar-paying and solar-exempt customers. The currently-approved SEA Rider includes a Time of Generation Adjustment ("TOGA") component in order to reflect the actual avoided energy costs due to solar additions. The steps to calculate the SEA Rider and the TOGA are detailed on pages 4 through 9 in the Company's April 25 compliance filing, with final modifications detailed in the Commission's December 12, 2016 Order. Also in that Order, the Commission accepted Minnesota Power's commitment to develop and provide in its 2016 rate case a methodology for allocating the Camp Ripley solar capacity benefits between solar-paying and solar-exempt customers. On November 2, 2016, the Company filed a general rate case and included the Company's proposal for allocating solar capacity benefits.[14] The general rate case docket is still ongoing.

[13] Docket No. E015/M-15-773.
[14] Docket No. E015/GR-16-664. Volume III of its Initial Filing, Direct Testimony of Julie I. Pierce, pages 41-44.

Status of Cost Allocation

Minnesota Power added the SEA Rider to customer bills beginning February, 2017. The process to calculate the TOGA and SEA Rider requires several additional steps beyond what is normally required to calculate the FPE Rider. The additional time needed to calculate and review the SEA Rider is approximately 4 to 6 hours per month. The amount of time required to calculate and review the SEA Rider is expected to increase as more solar generation is added.

Minnesota Power has not yet submitted a Solar Renewable Factor Filing for approval from the Commission, so this factor has not yet appeared on customer bills. Additionally, as there is no approved method for allocating solar capacity benefits, these costs and benefits are also not currently included on customer bills. In 2016, Minnesota Power did not recover any costs from solar-paying customers through the SEA Rider or the Solar Renewable Factor that would have been recovered from solar-exempt customers. Beginning in 2017, solar-paying customers will see a slight benefit on bills due to the zero fuel cost solar energy generated from Camp Ripley and the energy from the Company's 40 kW Community Solar Garden flowing through the SEA Rider. The costs for these projects have not yet been recovered through the Solar Renewable Factor.

Solar Renewable Energy Credit Challenges

Minnesota Power has a long history of collaborating with customers on mutually beneficial projects, from residential and commercial customer projects through its Conservation Improvement Program to large industrial customers on combined heat and power investments. In terms of solar projects specifically, the Company has partnered with diverse groups ranging from the Hartley Nature Center in Duluth to the Minnesota National Guard at Camp Ripley. However, as more customers have their own sustainability or renewable energy goals, SREC ownership becomes an important consideration in project development. Minnesota Power is experiencing an increasing number of scenarios in which the Company and customers want to partner to develop solar projects collaboratively, but experience a barrier of both entities needing to retain the SRECs for various reasons. While Minnesota Power is on track to be compliant with its obligations under the SES, it will continue to explore creative solutions to partnering with customers to achieve shared renewable energy and sustainability goals.

V. CONCLUSION

Minnesota Power views solar energy as an important and growing part of the renewable energy landscape and each of the projects and programs outlined in this report represent the Company's holistic approach to providing customers with solar energy options that work for them. Through this Report, the Company outlines its 2016 efforts to position itself for a balanced approach to be compliant with the SES in 2020 and beyond. In 2016, Minnesota Power can report exciting developments in each pillar of its solar strategy: Utility, Community and Customer. As previously mentioned, Minnesota Power's first utility scale solar project, a 10 MW array at Camp Ripley in Little Falls, MN, the largest on any National Guard base in the nation, became operational in 2016. The Company's first Community Solar Garden Pilot Program was also approved in 2016 and will be producing solar energy for

participating customers in 2017.[15] Finally, the Company continued its longstanding support of small solar systems through its SolarSense rebate program, which has been in place for over a decade, by tripling the amount of incentives available for customer-sited solar. With proactive action in each pillar of the Company's solar strategy, Minnesota Power is well-positioned for compliance with its SES requirements in 2020. The Company continues to execute its *Energy***Forward** resource strategy to diversify its entire energy mix to ultimately protect affordability, reliability and the environment for all customers.

Dated: June 1, 2017

Respectfully submitted,

Jennifer J. Peterson
Policy Manager
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355–3202
jjpeterson@mnpower.com

[15] Docket No. E015/M-15-825.

STATE OF MINNESOTA	)	AFFIDAVIT OF SERVICE VIA
	) ss	ELECTRONIC FILING
COUNTY OF ST. LOUIS	)	

Susan Romans of the City of Duluth, County of St. Louis, State of Minnesota, says that on the **1st day of June, 2017,** she served Minnesota Power's Annual Compliance Report in **Docket No. Docket No. E999/M-17-283** on the Minnesota Public Utilities Commission and the Minnesota Department of Commerce via electronic filing. The persons on the attached service were served as requested.

Susan Romans

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michael	Allen	michael.allen@allenergysolar.com	All Energy Solar	721 W 26th st Suite 211 Minneapolis, Minnesota 55405	Electronic Service	No	OFF_SL_17-283_Official
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	Yes	OFF_SL_17-283_Official
John	Aune	johna@bluehorizonsolar.com	Blue Horizon Energy	171 Cheshire Ln Ste 500 Plymouth, MN 55441	Electronic Service	No	OFF_SL_17-283_Official
Peter	Beithon	pbeithon@otpco.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_17-283_Official
Sara	Bergan	sebergan@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official
William A.	Blazar	bblazar@mnchamber.com	Minnesota Chamber Of Commerce	Suite 1500 400 Robert Street North St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Michael J.	Bull	mbull@mncee.org	Center for Energy and Environment	212 Third Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-283_Official
Jessica	Burdette	jessica.burdette@state.mn.us	Department of Commerce	85 7th Place East Suite 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Joel	Cannon	jcannon@tenksolar.com	Tenk Solar, Inc.	9549 Penn Avenue S Bloomington, MN 55431	Electronic Service	No	OFF_SL_17-283_Official
Steve W.	Chriss	Stephen.chriss@wal-mart.com	Wal-Mart	2001 SE 10th St. Bentonville, AR 72716-5530	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Steve	Coleman	BADEMAIL-scoleman@appliedenergyinnovations.org	Applied Energy Innovations	4000 Minnehaha Ave S Minneapolis, MN 55406	Paper Service	No	OFF_SL_17-283_Official
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_17-283_Official
Lisa	Daniels	lisadaniels@windustry.org	Windustry	201 Ridgewood Ave Minneapolis, MN 55403	Electronic Service	No	OFF_SL_17-283_Official
Chris	Davis	christopher.davis@state.mn.us	Department of Commerce	Suite 280 85 Seventh Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-283_Official
Ian	Dobson	Residential.Utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	Yes	OFF_SL_17-283_Official
Ian	Dobson	ian.dobson@ag.state.mn.us	Office of the Attorney General-RUD	Antitrust and Utilities Division 445 Minnesota Street, 1400 BRM Tower St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_17-283_Official
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_17-283_Official
Emma	Fazio	emma.fazio@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Nathan	Franzen	nathan@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_17-283_Official
Bruce	Gerhardson	bgerhardson@otpco.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_17-283_Official
Bill	Grant	Bill.Grant@state.mn.us	Minnesota Department of Commerce	85 7th Place East, Suite 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Tony	Hainault	anthony.hainault@co.hennepin.mn.us	Hennepin County DES	701 4th Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	OFF_SL_17-283_Official
J Drake	Hamilton	hamilton@fresh-energy.org	Fresh Energy	408 St Peter St Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Sam	Hanson	shanson@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 South Eighth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official
Jack	Hays	jack.hays@westwoodps.com	Westwood Professional Services	7699 Anagram Drive Eden Prairie, MN 55344	Electronic Service	No	OFF_SL_17-283_Official
Brandon	Heath	bheath@misoenergy.org	MISO Energy	2985 Ames Crossing Rd Eagan, MN 55121	Electronic Service	No	OFF_SL_17-283_Official
Holly	Hinman	holly.r.hinman@xcelenergy.com	Xcel Energy	414 Nicollet Mall, 7th Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Anne	Hunt	anne.hunt@ci.stpaul.mn.us	City of St. Paul	390 City Hall 15 West Kellogg Boulevard Saint Paul, MN 55102	Electronic Service	No	OFF_SL_17-283_Official
Dwight	Jelle	dkjelle@gmail.com	Best Power International, LLC	P.O. 5126 Hopkins, MN 55343	Electronic Service	No	OFF_SL_17-283_Official
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_17-283_Official
Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota Street St. Paul, MN 551012134	Electronic Service	No	OFF_SL_17-283_Official
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official
John	Kearney	jmkearney@MnSEIA.org	MnSEIA	2512 33rd Ave S Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-283_Official
Mara	Koeller	mara.n.koeller@xcelenergy.com	Xcel Energy	414 Nicollet Mall 5th Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-283_Official
Jon	Kramer	sundialjon@gmail.com	Sundial Solar	3209 W 76th St Edina, MN 55435	Electronic Service	No	OFF_SL_17-283_Official
Allen	Krug	allen.krug@xcelenergy.com	Xcel Energy	414 Nicollet Mall-7th fl Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Amy	Liberkowski	amy.a.liberkowski@xcelenergy.com	Xcel Energy	414 Nicollet Mall 7th Floor Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_17-283_Official
Bob	Long	rlong@larkinhoffman.com	Larkin Hoffman (Silicon Energy)	1500 Wells Fargo Plaza 7900 Xerxes Ave S Bloomington, MN 55431	Electronic Service	No	OFF_SL_17-283_Official
Paula	Maccabee	Pmaccabee@justchangelaw.com	Just Change Law Offices	1961 Selby Ave Saint Paul, MN 55104	Electronic Service	No	OFF_SL_17-283_Official
Susan	Mackenzie	susan.mackenzie@state.mn.us	Public Utilities Commission	121 7th Place E Ste 350 St. Paul, MN 551012147	Electronic Service	No	OFF_SL_17-283_Official
Kavita	Maini	kmaini@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_17-283_Official
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_17-283_Official
Natalie	McIntire	natalie.mcintire@gmail.com	Wind on the Wires	570 Asbury St Ste 201 Saint Paul, MN 55104-1850	Electronic Service	No	OFF_SL_17-283_Official
Stacy	Miller	stacy.miller@state.mn.us	Department of Commerce	State Energy Office 85 7th Place East, Suite 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Herbert	Minke	hminke@allete.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_17-283_Official
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official
Martin	Morud	mmorud@trunorthsolar.com	Tru North Solar	5115 45th Ave S Minneapolis, MN 55417	Electronic Service	No	OFF_SL_17-283_Official
Michael	Noble	noble@fresh-energy.org	Fresh Energy	Hamm Bldg., Suite 220 408 St. Peter Street St. Paul, MN 55102	Electronic Service	No	OFF_SL_17-283_Official
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220 Minneapolis, MN 55407-1229	Electronic Service	No	OFF_SL_17-283_Official
Samantha	Norris	samanthanorris@alliantenergy.com	Interstate Power and Light Company	200 1st Street SE PO Box 351 Cedar Rapids, IA 524060351	Electronic Service	No	OFF_SL_17-283_Official
Kate	O'Connell	kate.oconnell@state.mn.us	Department of Commerce	Suite 50085 Seventh Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-283_Official
Donna	Pickard	dpickardgsss@gmail.com	Genie Solar Support Services	1215 Lilac Lane Excelsior, MN 55331	Electronic Service	No	OFF_SL_17-283_Official
Gayle	Prest	gayle.prest@minneapolismn.gov	City of Mpls Sustainability	350 South 5th St, #315 Minneapolis, MN 55415	Electronic Service	No	OFF_SL_17-283_Official
Enio	Ricci	ericci@invenergyllc.com	Invenergy LLC	17830 New Hampshire Ave Ste 300 Ashton, MD 20861	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	Ste 122 9100 W Bloomington Frwy Bloomington, MN 55431	Electronic Service	No	OFF_SL_17-283_Official
David	Shaffer	DShaffer@MnSEIA.org	Minnesota Solar Energy Industries Project	1005 Fairmount Ave Saint Paul, MN 55105	Electronic Service	No	OFF_SL_17-283_Official
Gary	Shaver	gshaver@silicon-energy.com	Silicon Energy	3506 124th St NE Marysville, WA 98271	Electronic Service	No	OFF_SL_17-283_Official
Erin	Shea	eshea@silicon-energy.com	Silicon Energy	PO Box 376 8787 Silicon Way Mt Iron, MN 55768	Electronic Service	No	OFF_SL_17-283_Official
Doug	Shoemaker	dougs@mnRenewables.org	MRES	2928 5th Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_17-283_Official
Joshua	Smith	joshua.smith@sierraclub.org		85 Second St FL 2 San Francisco, California 94105	Electronic Service	No	OFF_SL_17-283_Official
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-283_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Lise	Trudeau	lise.trudeau@state.mn.us	Department of Commerce	85 7th Place East Suite 500 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-283_Official
Cam	Winton	cwinton@mnchamber.com	Minnesota Chamber of Commerce	400 Robert Street North Suite 1500 St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_17-283_Official
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	OFF_SL_17-283_Official
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_17-283_Official

PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

Minnesota Public Utilities Commission			
INFORMATION DOCKET E999/M-17-283		**Reporting Period:**	**January 1, 2016 - December 31, 2016**
Solar Energy Standard Annual Report		**Utility:**	**Minnesota Power**
Report Year:	2016	Date Submitted:	June 1, 2017

Filing Utility Information		Contact Information	
Company ID#		Contact Name	Jennifer Peterson
Company Name	Minnesota Power	Contact Title	Policy Manager
Street Address Line 1	30 W Superior Street	Contact Telephone	218-355-3202
Street Address Line 2		Contact Email	jjpeterson@mnpower.com
City	Duluth		
State	MN		
Zip Code	55802		

PUBLIC DOCUMENT
TRADE SECRET DATA EXCISED

Minnesota Public Utilities Commission			
INFORMATION DOCKET E999/M-17-283	**Reporting Period:**		**January 1, 2016 - December 31, 2016**
Solar Energy Standard Annual Report	**Utility:**		**Minnesota Power**
Report Year:	2016	Date Submitted:	June 1, 2017

Annual Minnesota retail sales for the reporting year

Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Points 4.A & 4.B

1. Annual MN retail sales for the reporting year		8,181,381,814
2. Annual Excluded customer sales for the reporting year		5,144,285,982
3. Annual Minnesota retail sales less exclusions		3,037,095,832

Customer requesting exclusion from the SES that have been approved by the utility

Docket Nos. E999/CI-13-542, E999/M-14-321, Commission Order (October 23, 2014), Order Point 2.a

Customer Name	Premise	City	NAICS	Annual kWh Usage
[TRADE SECRET DATA EXCISED				
Total MN Sales for Excluded Customers				-

Minnesota Public Utilities Commission

INFORMATION DOCKET E999/M-17-283		**Reporting Period:**	**January 1, 2016 - December 31, 2016**
Solar Energy Standard Annual Report		**Utility:**	**Minnesota Power**
Report Year:	2016	Date Submitted:	June 1, 2017

Solar generation on the utilites' system during the reporting period

Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 4.E

	Number of Facilities on Utility System	Capacity	Number registered in M-RETS	Capacity registered in M-RETS	SRECs Generated
Less than 20kW	178	1.065	42	0.333	200
Greater than 20kW	10	11.213	4	10.119	1790

Estimated amount of solar generation a utility would be required to obtain in 2020

Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Points 4.F & 4.G

	Capacity (MW)	SRECs (MWh)
Entire 1.5% Standard	31	53,208
Small Scale Carve-Out (10% of 1.5%)	4	5,321
2030 Goal of 10%	208	354,722

Breakdown of S-RECS generated

Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 5

	Balance at Beginning of Reporting Year	Accrued in Reporting Year	Used in Reporting Year	Year End Balance
1. Utility-owned solar projects	0	1719	0	1719
2. Solar Facilities that have entered into a PPA with the utility	0	0	0	0
3. Community Solar Gardens (ARR)				
a. Receiving an incentive (any type)	0	0	0	0
b. Not receiving an incentive	0	0	0	0
4. Community Solar Gardens (VOS)				
a. Receiving an incentive (any type)	0	0	0	0
b. Not receiving an incentive	0	0	0	0
5. Facilities receiving a VOS rate (not incuded above)	0	0	0	0
6. Facilities under a net metering tariff				
a. Receiving an incentive (any type)	76	271	0	347
b. Not receiving an incentive	0	0	0	0
7. Facilities receving an incentive (not included above)	0	0	0	0
8. Facilities that do not fall into any other category	0	0	0	0
Total	76	1990	0	2066

Purchases and sales of S-RECS to meet the SES

Docket No. E999/CI-13-542, Commission Order (April 25, 2014), Order Point 4.K

	SRECs Purchased	SRECs Sold
SES (>20kW)	0	0
Small Scale Carve Out (<20kW)	0	0
Total	0	0

Minnesota Public Utilities Commission			
INFORMATION DOCKET E999/M-17-283	**Reporting Period:**		**January 1, 2016 - December 31, 2016**
Solar Energy Standard Annual Report	**Utility:**		**Minnesota Power**
Report Year:	2016	Date Submitted:	June 1, 2017

Additional information supporting assumed capacity factor, effective load carrying capability, and MISO capacity accreditation for existing or planned solar facilities

Docket Nos. E999/CI-13-542, E999/M-14-321, Commission Order (October 23, 2014), Order Points 2.b & 2.d

Solar Project	Nameplate (MW)	Capacity Factor	Capacity Accreditation	Project Status
MiM DG Solar <20 kW	0.0839	9.50%		existing
MiM DG Solar >20 kW	0.0787	10.18%		existing
MP DG Solar <20 kW	0.2492	10.98%		existing
MP Solar Garden Arrowhead	0.04	0.00%^		existing
Camp Ripley	10	9%`	5.4*	existing

Information on Assumed Capacity Factor

Only capacity factors for solar facilities registered in M-RETs are reported. Minnesota Power does not have capability to access generation values for all the solar facilities located on the system that are not registered in M-RETS.
Capacity Factor is the weighted average Capacity Factor for the aggregated Solar Projects for MiM DG Solar <20 kW, MiM DG Solar >20 kW, MP DG Solar <20 kW.
^MP Solar Garden Arrowhead started producing energy at the end of December 2016. This capacity factor is not indicitive of long-term generation expectations.
`Camp Ripley started producing energy in October 2016. This capacity factor is not indicitive of long-term generation expectations.

Information on effective load carrying capability and MISO Capacity Accreditation

*Capacity accredidation value is UCAP for MISO planning year 2017-2018. Camp Ripley did not receive capacity accredidation value for planning year 2016-2017 because it was not available for the full year.