414 Nicollet Mall
Minneapolis, MN 55401

February 13, 2014

—Via Electronic Filing—

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: COMMENTS
VALUE OF SOLAR METHODOLOGY
DOCKET NO. E999/M-14-65

Dear Dr. Haar:

Northern States Power Company, doing business as Xcel Energy, submits the attached Comments in response to the Value of Solar (VOS) methodology proposed by the Department of Commerce, Division of Energy Resources on January 31, 2014.

We have electronically filed this document with the Minnesota Public Utilities Commission and copies have been served on the parties on the attached service list.

Please contact Amy Liberkowski at amy.a.liberkowski@xcelenergy.com or 612-330-6613 if you have any questions regarding this filing.

Sincerely,

/s/

CHRISTOPHER B. CLARK
REGIONAL VICE PRESIDENT
RATES AND REGULATORY AFFAIRS

Enclosures
c: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
David C. Boyd	Commissioner
Nancy Lange	Commissioner
J. Dennis O'Brien	Commissioner
Betsy Wergin	Commissioner

IN THE MATTER OF ESTABLISHING A DISTRIBUTED SOLAR VALUE METHODOLOGY UNDER MINN. STAT. 216B.164, SUBD. 10 (E) AND (F)	DOCKET NO. E999/M-14-65 **COMMENTS**

OVERVIEW

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission these Comments in response to the proposed Value of Solar (VOS) methodology filed by the Department of Commerce, Division of Energy Resources on January 31, 2014. This methodology was preceded by months of thoughtful and constructive dialogue among stakeholders, including the Company, Department, solar developers, and many others. We thank the Department for engaging stakeholders prior to filing the final proposed methodology and appreciate the opportunity to provide comments as part of the formal proceeding.

As noted in the proposed methodology, the primary advantage of a VOS tariff compared to net metering is that, if properly designed, the VOS tariff will level the playing field for distributed solar, such that the utility and customers are indifferent from a cost perspective as to whether their energy comes from distributed solar or from the broader energy mix. This advantage is realized when the rate paid under the VOS tariff accurately reflects the true avoided costs and tangible benefits of distributed solar on a particular utility system. In other words, when the amount customers are paying for distributed solar equals the costs that are avoided, there is no impact on rates and no inequity between solar and non-solar customers. In this scenario, solar customers share in the cost of maintaining the grid and are paid a fair value for their contributions. In our view, this is distributed solar "done right." By basing solar rates on facts and objective analysis, we can transition to higher levels of distributed resources while maintaining a reliable grid, offering affordable rates, and avoiding cost-shifts between customers.

In contrast, when we pay solar customers for something solar does not actually avoid or pay more than the cost that is avoided, we are paying in excess of the real value of solar and are not solving one of the key issues associated with net metering—cost-shifting. In this scenario, the VOS rate acts more like an incentive and may send improper price signals to customers.

We believe incentives play an important role in helping infant industries, like Minnesota's solar industry, gain traction and reach sustainable levels of growth. Over the next five years, nearly $100 million will be available to help drive solar development. We support these programs and offer to work with the Department and others on additional incentive options should increased support be needed to achieve the level of industry growth envisioned by the Legislature and other stakeholders. Using an incentive approach, as opposed to enhancing the VOS, allows the VOS to achieve its stated objectives while ensuring the solar industry has the support it needs to grow.

We have carefully evaluated the proposed methodology and generally agree with the categories of values selected for inclusion and those that have been excluded. It is in how some of those values are calculated that there is some disagreement. In these Comments we focus on components where the methodology differs from precedent and guidance in our resource planning processes and where we believe the methodology compensates customers for something that solar does not actually avoid or both. For example, areas where the proposed methodology is not supported by existing resource planning practices include avoided generation capacity cost and fuel price escalation factor. Areas where the methodology identifies a cost that solar does not actually avoid or overstates the avoided cost include:

- Fuel hedge value,
- Avoided environmental cost,
- Avoided reserve capacity cost,
- Avoided transmission capacity cost, and
- Avoided distribution capacity cost.

We believe our suggested modifications will better ensure that all customers benefit from the expansion of solar under the VOS tariff, which is a core objective of the alternative framework and of the Company.

COMMENTS

In these Comments we provide background on the VOS statute and offer principles to guide evaluation of the proposed methodology. We also highlight areas where we agree with or accept the Department's proposal and areas where we believe modifications are needed to satisfy the overarching goals of the VOS tariff and support a fact-based approach that is consistent with past precedent and current resource planning practices.

A. Value of Solar Framework

In the last session, the Minnesota Legislature passed omnibus energy legislation establishing, among other things, aggressive goals for solar energy for the state of Minnesota. Specifically, the Solar Energy Standard requires 1.5 percent of a public utility's 2020 retail sales, net of customer exclusions, to come from solar energy resources. The Legislature also allows public utilities like the Company to:

> …*apply for commission approval for an alternative tariff that compensates customers through a bill credit mechanism for the value to the utility, its customers, and society for operating distributed solar photovoltaic resources interconnected to the utility system.*[1]

In assessing the VOS, the Department is required to account for "the value of energy and its delivery, generation capacity, transmission capacity, transmission and distribution line losses, and environmental value."[2] The Department may:

> …*based on known and measurable evidence of the cost or benefit of solar operation to the utility, incorporate other values into the methodology, including credit for locally manufactured or assembled energy systems, systems installed at high-value locations on the distribution grid, and other factors.*[3]

It is our understanding that the VOS tariff, as a replacement of net metering, would apply to all distributed solar installations with capacity less than one MW_{AC} installed after Commission approval of a utility's VOS tariff.[4] The VOS rate is required to be at least equal to the utility's applicable retail rate for the first three years the rate is in effect.

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[1] Minn. Stat. § 216B.164, Subd. 10(a)
[2] *Id.* at Subd. 10(f)
[3] *Id.*
[4] Minn. Stat. § 216B.164, Subd. 10(b)

In addition to the authorization for a VOS tariff, the legislation provides funding for a solar incentive program and Made in Minnesota rebate program to promote the installation of solar resources and help the Company meet the Solar Energy Standard. The Company also filed a community solar gardens program on September 30, 2013, as required by statute.[5]

Given the infancy of the solar industry in Minnesota, we support the use of incentives and customer programs to drive participation and industry growth. However, we agree with the Department that the VOS rate is not itself an incentive.[6] To the extent that an incentive is needed to bring the VOS to the retail rate or additional incentives are needed to spur the market, these incentives should be clearly labeled and separate from the base VOS components. Keeping incentives separate improves the transparency and accuracy of the rate and more easily allows for changes to the incentive levels as markets mature and costs decline.

B. Guiding Principles

In our September 30 Comments to the Department, we highlighted overarching principles to help guide the development of the VOS methodology. We summarize and expand on them here to clarify the Company's objectives for the VOS tariff and provide context for the discussion.

1. Maximize Customer Value

Xcel Energy is among the nation's leaders in delivering competitively priced, clean energy from renewable sources. We have aggressively pursued wind energy for our customers, which has made us the nation's number one wind provider for nine years running. We are approaching solar in a similar way and currently rank in the top ten nationally for installed solar capacity.

We believe solar technologies have great promise and will play an important role in our future resource mix. At the same time, because solar is currently more expensive than wind energy, how we acquire solar should be carefully evaluated to ensure ratepayers are receiving a fair value for this renewable generation resource. As such, we are committed to adding solar generation resources to the system in a fair and balanced way that provides additional support to develop the market in the near term, but manages cost and value to our customers in the long term.

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[5] Minn. Stat. § 216B.1641

[6] Docket No. E999/M-14-65. Filing of the Minnesota Department of Commerce, Division of Energy Resources. (January 31, 2014), p. 6.

We believe a mix of solar resources will allow us to support the growth of the solar industry while managing the cost of compliance. Currently, large-scale solar facilities provide the value of distributed rooftop solar at a lower cost. While we support continued development of a vibrant rooftop program in Minnesota, we believe a balanced approach to solar development that also takes advantage of cost-effective, large-scale solar will lower the costs of compliance with the Solar Energy Standard and establish a market basis for measuring value to the customer.

Additionally, our current estimates suggest that the new Solar*Rewards and Made in Minnesota incentive programs will drive significant small solar installations, beyond what is required to meet the 10 percent small solar requirement. The new Solar*Rewards program and Made in Minnesota program have a combined total budget of $100 million over the next five years to provide direct support to customers and solar installers. Community solar gardens are also able to receive incentives through these programs. Thus, it would be prudent to be conservative on the methodology components that are less certain and measurable, like the fuel price escalation factor and fuel hedge value, to avoid overcompensating solar customers at the expense of other customers and over-stimulating the market.

2. Known, Measurable, and Consistent with Past Precedent

It is important that the components of the VOS rate be clearly measurable, trackable, and defensible. This can be accomplished by taking an objective approach to identifying what is truly avoided or deferred by distributed solar. We believe the methodology should rely on standard approaches to quantifying the value of avoided energy, capacity, and system losses, such as are used in evaluating wind and nuclear resources. We should remain consistent with precedent or guidance from the resource planning process, as those approaches form the basis of real resource decisions and have benefited from years of application and review. To the extent changes are recommended to major planning assumptions, such as the long-term natural gas forecast and avoided carbon emissions value, those changes should be evaluated as part of a formal and comprehensive regulatory process that considers the broader implications of such changes.

We consider avoided energy, capacity, and system losses to be the base system costs avoided by a distributed solar resource. On top of that base, the various benefits or attributes of solar generation systems, including the measurable environmental and other quantifiable benefits of the solar systems should also be considered. Any optional values considered for inclusion in the methodology should clearly meet the burden established by statute that it be "based on known and measurable evidence of

the cost or benefit of solar operation to the utility." According to our evaluation, we do not believe any of the optional components proposed by other parties meet that standard. While there may be benefits (or costs) that accrue to society as a result of distributed solar, they must be "known and measurable" and relevant to utility operations to be included in the methodology. Although the VOS values may vary over time as the system changes or public policy develops (especially with respect to emissions), the basic formula by which they are established will remain the same.

3. Transparency and Separation of Incentives

As noted above, we believe each individual value component should be transparent, such that it is clear on what it is based and how it is calculated. To the extent that additional or higher incentives are needed to support market development, we are willing to work with parties to increase incentives. However, all incentives should be clearly separate from the base VOS rate. We believe this is consistent with the framework established in the Omnibus legislation, in which the VOS rate is directed to reflect the measurable value of solar and distinct incentive programs (*e.g.*, Solar*Rewards and Made in Minnesota) are available to promote increased market activity.

This separation is particularly important if it is determined that the VOS is less than the utility's applicable retail rate. Because statute requires the VOS rate to be at least equal to the utility's applicable retail rate for the first three years, one option is to set the VOS rate at the appropriate level below the retail rate and potentially use the "other" component to add an incentive to bring the overall rate to the retail rate. If this occurs, the incentive component should be clearly identified, such that it can be tracked and revisited once the initial three-year period has expired.

4. Establish Proper Price Signal

We believe the VOS rate should be checked against the cost of electric service for each customer class to ensure that the VOS rate makes sense in the context of existing rate design and does not result in unintended consequences. For example, if the VOS rate allows a commercial and industrial (C&I) customer to participate in a solar garden more cheaply than if they received service under our standard tariffs, we could see a large influx of developers and gardens catered to large C&I customers. In that situation, a high VOS rate could significantly increase the amount of higher-cost solar on the system at the expense of more cost-effective solar resources, which would increase the cost of compliance for all customers. This consequence will be greatly mitigated if the VOS reflects true avoided costs. Nonetheless, it is important to evaluate the appropriate VOS for different customer classes and ensure that the VOS

tariff sends the proper price signals and supports the goal of maximizing value to customers.

5. Recognize the Value of the Grid to All Customers

A strong, reliable and integrated electric grid is needed now more than ever. We are investing in the electric grid to accommodate new technologies and new generation resources and to ensure our customers have high-quality energy when and where it is needed. This includes solar customers, who derive significant value from the grid. Solar customers rely on the grid to power their homes and businesses when the sun is not shining and to accept power when their generation is not needed. Like other customers, they also rely on the grid when turning on appliances and equipment such as air conditioners and compressors, which have a higher power draw during start up. The grid is ready to respond to these events at a moment's notice, 24 hours a day, 365 days a year.

Given that all customers benefit from the power system, it is important that all customers share in the cost of maintaining and transforming it. Similarly, it is important that solar customers contribute to the costs that are needed to accommodate higher penetrations of distributed solar. These are often referred to as "integration costs," and are generally defined as the costs that intermittent resources add to the overall costs of operating the power system. For example, from a power supply perspective, the variability and uncertainty of solar can contribute to inaccuracies in hourly and day ahead forecast of net load for the system and create the need for additional ancillary services. These services could include frequency regulation, voltage support, and load following/ramping.

From a distribution system perspective, the addition of distributed solar to the distribution grid changes how the grid has historically operated from a one-way system to a two-way system. Increased penetration of solar on the distribution system will result in increased capital expenditures, as well as operating costs. These costs should be considered in future VOS rate calculations, particularly as solar penetration increases. We will study this issue and may suggest a method for measuring integration costs in a future VOS rate filing.

C. Recommendations

Below we discuss the areas where we agree with or accept the proposed methodology and the areas where we believe modifications are warranted. Attachment A provides our estimate of the VOS rate incorporating our suggested modifications and compares that to the proposed methodology.

1. *Areas of Agreement and Acceptance*

There are some areas where we generally agree with or accept the proposed methodology. For the methodology areas listed below, we accept the Department's recommendation:

- Marginal fuel,
- Avoided plant O&M (fixed and variable),
- VOS term of 25 years, and
- Use of inflation-adjusted rates.

While we accept the Department's recommendation on the inflation-adjusted rate, we note that our interpretation of Minn. Stat. § 216B.164, subd. l and our understanding of the legislative intent does not support a rate that changes over time with inflation.[7] However, we do not object to an inflation-adjusted value should the Commission prefer that option, provided that it is clear that the total compensation paid to solar customers is the same under the levelized rate and inflation-adjusted rate. To be clear, the inflation adjustment is not applied to the levelized VOS rate; a separate inflation-adjusted rate is calculated that pays a lower amount in the early years and higher amounts in later years, all equal to compensation paid using a levelized approach.

2. *High Impact Areas of Disagreement*

We discuss below, in order of the estimated impact, the areas where we recommend changes to the proposed methodology. Our recommendations are intended to support an objective approach that produces results consistent with our resource planning processes and reflective of current realities. The VOS tariff has the flexibility to change as realities change, which supports basing current rates on the facts we have available today.

We do not believe that there is anything about the VOS approach that would lead to major changes in planning assumptions and practices and that is problematic to do so in an isolated manner and without a robust evaluation. Additionally, paying for costs that are not avoided, either because we do not incur direct costs related to that component or solar is not effective at avoiding those costs, results in higher rates for non-solar customers, all else being equal. This would undermine the stated purpose of the VOS tariff to accurately account for the real value of distributed solar and to eventually remove the cross-subsidization concerns inherent in net metering.

[7] "An owner of a solar photovoltaic device receiving an alternative tariff rate under this section must be paid the same rate per kilowatt-hour generated each year for the term of the contract."

The following table summarizes the difference between the proposed methodology and the Company's recommendations for the high impact components discussed below. We note that these numbers are preliminary and based on our initial analysis. Should we file for a VOS tariff, we would conduct a more comprehensive analysis.

	DOC Methodology ($/kWh)	Company Avoided Cost Distributed PV Value ($/kWh)	Difference
Avoided Generation Capacity Cost	$0.034	$0.012	$0.022
Avoided Environmental Cost	$0.030	$0.013	$0.017
Avoided Transmission Capacity Cost	$0.014	$0.000	$0.014
Avoided Fuel Cost	$0.056	$0.045	$0.011

a. Avoided Generation Capacity Cost

The avoided generation capacity cost is based on a weighting of the capital cost of combustion turbines and combined cycle turbines based on the marginal solar heat rate. Our primary concern with this methodology is that it is inconsistent with how we view resource additions in resource planning and, as a result, places greater weight on combined cycle units than what is represented in our current investment plans. This serves to increase the avoided generation capacity credit compared to what we would expect based on the planned type and timing of new generation resources. In short, the methodology assumes that a more expensive resource will be avoided than is actually anticipated. This places the methodology at odds with what we know of our current situation.

We believe our long-term resource needs will require primarily peaking facilities. Thus, the over-weighting on CCs as the displaced resource is inconsistent with our current expectations and how we calculate avoided generation capacity cost for our Conservation Improvement Program. Also, in valuing the displaced resource, current market prices should be used.

Additionally, the decisions in our most recent resource plan affirmed that additional generation capacity is not expected to be needed until 2017. To the extent additional generation capacity is acquired through the current resource planning process, the need for future generation may possibly be delayed even beyond 2017. Therefore, as a new, incremental generation resource, solar does not have the potential to avoid capacity investment until that time. As a result, the capacity credit should not be applied until the Company has an identified capacity need. The avoided capacity

investment credit for solar resources will need to be based on Midcontinent Independent System Operator (MISO) capacity accreditation practices in place at that time. This is consistent with evaluation of other generation resources in our resource planning process and most accurately reflects the value to our system of additional solar resources.

b. Environmental Value

The proposed methodology bases the environmental value on the Commission's existing externality values, but substitutes the Federal Government's "Social Cost of Carbon" (SCC) for the Commission's approved carbon dioxide (CO_2) externality value.

Throughout the stakeholder process, we have advocated for an environmental value that is based on environmental costs that are actually avoided. Given the disparity between our estimates and the Department's interpretation of the statute to include an environmental value,[8] in order to narrow differences, we focus our comments on why it is appropriate to apply only the midpoint of the current carbon proxy value range and the need to update the environmental value as we learn more about the cost of compliance with expected Environmental Protection Agency rules on greenhouse gas emissions.

Below we discuss our two primary concerns with the proposed environmental value methodology: 1) Carbon value, and 2) Other externality values.

i. Carbon Value

We believe the environmental value should be based solely on the carbon proxy value approved by the Commission for use in our resource planning processes and not include any externality values. The carbon proxy value is an approximation of the potential real costs the Company and our customers might expect to pay under a future carbon regulation framework. Additionally, it was established as part of an extensive docket in which there was significant dialogue and has been applied in recent resource decisions. It provides a sound basis for assigning a carbon value since

[8] We argued that the environmental costs should be costs actually avoided rather than proxy costs and that payment of an environmental price here would represent the first time an energy vendor on the NSP system is directly receiving an actual payment for avoided emissions. The Department has interpreted the statute to require an environmental value even if there is not a direct cost avoidance. While we still support our initial position and believe it is consistent with statute, we believe that given the Department's interpretation, that the environmental value should be based solely on the carbon proxy value approved by the Commission, as this is the expected cost that the utility would avoid.

it represents potential future costs that could be avoided by solar and has been vetted through a public process. The Department and Minnesota Pollution Control Agency recently submitted comments recommending that the Commission maintain the current range of $9 to $34 per ton of CO_2 emitted, but extend the applicable date from 2017 to 2019.[9]

In contrast, the SCC is an estimate of the potential economic damages associated with increases in carbon emissions and includes a wide range of potential costs, including changes in net agricultural productivity, human health, and property damages from increased flood risk.[10] Its purpose is to estimate the climate benefits associated with federal rulemakings on a provisional basis, not to be a precise value in resource planning or ratemaking. We believe that the use of broad social costs goes beyond the costs a utility may expect to avoid and can accurately measure.

Additionally, the SCC has not yet been vetted in a transparent stakeholder process at the state or federal level. This concern was discussed as part of the Environmental Externalities proceeding in Docket No. E999/CI-00-1636. At the Commission's December 19, 2013 meeting, the Commission declined to adopt the SCC as an interim carbon externality value, preferring instead to wait to evaluate potential changes until the Minnesota study is complete. The discussion preceding this decision included concerns that it would be premature at this time to apply the SCC as an interim value, largely because Minnesota stakeholders have not had a chance to weigh in and fully test and vet the value. We believe this same decision and reasoning holds true with regard to the VOS methodology. Additionally, the SCC is currently subject to public comment, which could result in changes to the value or its application. This further supports selection of the Commission-approved carbon proxy value over the SCC. Finally, while we believe use of the Commission-approved proxy price midpoint makes sense for today under the current statutory scheme, as we learn more about the cost of compliance with EPA's climate rules, these rules should be incorporated in annual changes to the VOS tariff.

ii. Other Externality Values

In resource planning, we use externality values for a variety of pollutants to evaluate resource alternatives. Externality values represent the impact of pollutants on society as estimated through broad review and interpretation of health and environmental

[9] Docket Nos. E999/CI-07-1199 and E999/DI-13-796. Comments of the Department of Commerce and Minnesota Pollution Control Agency (January 16, 2014).
[10] The Social Cost of Carbon. http://www.epa.gov/climatechange/EPAactivities/economics/scc.html

studies. By definition, they are costs incurred by society as a whole, not by a particular company or industry.

Externalities should not be included in the VOS rate because they are not costs that are incurred by the utility system and passed along to customers, and cannot be avoided by the installation of distributed solar on the system. They are estimates subject to significant assumptions and uncertainty, and as such, do not form the basis of environmental regulation. For example, while it is possible to calculate the externality costs associated with emission of a small quantity of sulfur dioxide (SO_2), EPA does not regulate SO_2 by charging emitters a per ton fee based on the emissions of that pollutant. Instead, it goes through an elaborate process to establish ambient air quality standards, requires states to evaluate air quality in different regions, and imposes stack-by-stack emission limits on power plants and other sources.

Today, the Twin Cities are in compliance with all ambient air quality standards. Additional controls to address ambient air quality for pollutants are unlikely. As a result, with the possible exception of CO_2, we do not expect additional solar to avoid any measurable emissions-related costs. For these reasons, we believe it is inappropriate to use externality values in the calculation of compensation for solar customers. However, should the Commission want to expand the environmental value beyond carbon, we believe only those emissions with a known and measurable cost should be included and the value should be based on the actual costs a utility incurs to mitigate that pollutant. For example, the environmental value for SO_2, if included, should be based on the allowance price in the cap and trade market, as it can be linked to a market-validated value. We note that today, SO_2 market values under the Clean Air Act's acid rain program are close to zero.

c. Avoided Transmission Capacity Cost

The proposed avoided transmission capacity cost is based on MISO's network integration service rate. However, as was discussed in Docket No. E002/CN-12-1240,[11] this rate does not represent the marginal cost for avoided transmission capacity. Moreover, the rate does not reflect any system savings at all because, per MISO's rules governing the network transmission service charges, the Company's transmission payments would not change as a result of solar additions.

We believe the avoided transmission capacity cost should be based on current investment plans and reflect those investments that can truly be avoided. Transmission investments are made for a variety of purposes, some of which, like the

[11] Docket No. E002/CN-12-1240. Xcel Energy's Exceptions to ALJ Report. (January 21, 2014).

integration of renewable energy facilities or reliability improvement projects, are not avoided by increased distributed solar penetration. For example, included in the network service transmission rate are our investments in the Southwest Minnesota 345 kV and Buffalo Ridge Incremental Generation Outlet (BRIGO) lines, which are major 345 kV lines that were added to bring wind resources to market. We continue to need to meet a Minnesota Renewable Energy Standard of 30 percent by 2020 (of which at least 25 percent must come from wind resources), and thus, these investments are not impacted by our solar decisions. Additionally, we manage flows of energy across our transmission systems that are unrelated to our use and we need to ensure that the system is reliable for all users of our system under Federal Energy Regulatory Commission (FERC) and North American Electric Reliability Corporation (NERC) requirements.

Again, part of our rate is the recent St. Cloud to Monticello portion of the 345 kV Fargo CapX2020 line. That line met both a local load serving need and the completed Fargo CapX2020 line will enhance a broader market transfer capability. Going forward, our CapX2020 projects, which are meeting similar wind and reliability requirements, would be included in the Department's proposed VOS avoided transmission cost calculation even though this transmission will not be avoided. These are examples of why use of the MISO network service rate overstates any avoidable transmission costs associated with solar.

Distributed solar will not materially change network flows, but could eventually, if at a large-enough scale, avoid a network resource. The transmission investments that are most likely to be avoided by solar are those associated with a deferred or avoided natural gas investment. For example, our proposed combustion turbine unit, Black Dog Unit 6, is located at an existing site and would use existing transmission interconnection rights, resulting in minimal incremental costs. In our example analysis shown in the table above, we have based the transmission costs on this resource addition.

We recommend valuing the avoided transmission cost, to the extent that there is any, using the transmission upgrade costs associated with the interconnection of planned natural gas units. It is important to be conscious of the appropriate credit applicable to deferred transmission capacity (and deferred distribution capacity). If the deferral of this capacity is never realized, the VOS will be inappropriately higher than the avoided T&D cost associated with customer's solar resource.

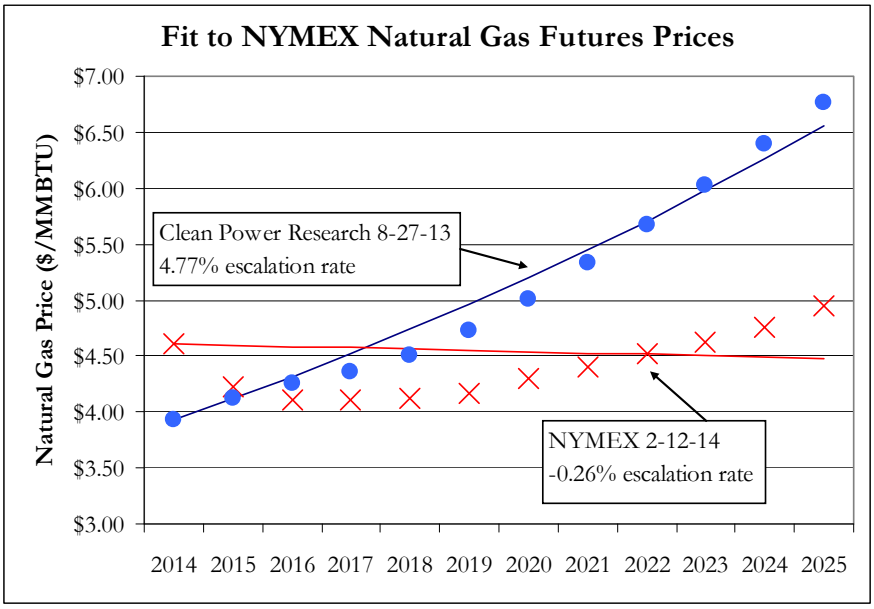
d. Avoided Fuel Cost

We have concerns with the fuel price escalation factor used in the methodology and the inclusion of the fuel hedge value and discuss each separately below.

i. Fuel Price Escalation Factor

Of the fixed assumptions presented in Table 3 of the proposed methodology, we believe the fuel price escalation factor should be modified to be consistent with assumptions used in our resource planning processes. Specifically, the fuel price escalation factor used in our resource plans for years beyond NYMEX forecasts is based on a blend from three independent consulting agencies and the current NYMEX pricing. We believe it represents the best projection of future prices. In contrast, the proposed methodology bases its natural gas price projections on the growth rate occurring over the NYMEX strip period. In practice, prices over the long term can vary from those in the short term, which is why we use experts to produce our long-term forecasts. We demonstrate the limitations of the proposed fuel price escalation methodology below.

The proposed escalation factor of 4.77 percent is based on NYMEX futures as of August 27, 2013. Since August, the future price of natural gas has fallen precipitously. The following figure recreates Figure 2 on page 8 in the proposed methodology and updates the figure with NYMEX data from February 12, 2014.



As the figure shows, the long-term price of gas has fallen by over $1.50/mmBtu.

Using current data, the proposed methodology for long-term escalation rates results in a value of -0.26 percent. This demonstrates the drawback of the proposed fuel price escalation methodology—it is sensitive to changing near-term data and can lead to non-intuitive results. The forecasts used in long-term resource planning are much more stable and more likely to produce reasonable results.

Assumptions about future natural gas prices are important because they impact resource decisions. For example, the Department's proposed escalation rate would likely make coal plant retirements appear very costly compared to continued operation. At the same time, it would make other renewables appear very cost-effective.

Additionally, the long-term growth rate is inconsistent with projections of natural gas supplies and basic economic principles. Current estimates indicate vast amounts of economically recoverable natural gas in the United States. If natural gas prices escalate at a high rate for a long period of time, basic supply and demand principles suggest users will find alternative sources of energy that are less costly, while suppliers will bring more natural gas to market to increase their profits. Both of these actions would serve to reduce the long-term price of natural gas.

Again, applying Commission-accepted precedent from resource planning dockets for all utilities will provide the most realistic and accurate estimate of this cost.

ii. Fuel Hedge Value

We believe a long-term price volatility or hedge value is an optional component of the VOS and can be separated from the avoided energy calculation. As noted by RMI, many studies acknowledge the general fuel hedge benefit of solar, but few quantify it. While the proposed methodology identifies three possible options for obtaining guaranteed fuel prices, there does not appear to be industry consensus on a methodology to derive a fuel hedge value. However, even if there was a consensus methodology, we believe the value would be zero or close to zero for the Company based on the fact that we do not currently incur any fuel hedging costs.

Any fuel hedge value should reflect the utility's current practices. Over the years, we have discussed with stakeholders the possible role of hedging in our portfolio. For a number of reasons, including the diversification of our current and projected generation mix, parties have generally agreed not to engage in financial fuel hedging activities in Minnesota. We expect this to continue given the relatively small contribution from natural gas to our overall mix. Because there are no financial hedge costs to offset, solar will not reduce fuel hedging costs for the Company.

Paying solar producers for a hedge value is inconsistent with past practices. Just like solar, wind resources also reduce the amount of natural gas used by the Company. Xcel Energy has developed one of the largest wind portfolios in the country without ever paying a wind developer for a theoretical hedge value. Given that current pricing of wind is below equivalent fossil fuel prices, a utility can effectively achieve the same type of fuel hedge for no cost to our ratepayers.

Should additional hedging be desired beyond the diversification inherent in our existing portfolio, a separate proceeding should be conducted to determine the appropriate level of hedging that makes sense for our generation portfolio and at what cost hedging should be pursued. It may also be appropriate to consider using the price of a long-term renewable energy product as an alternative to using a long-term natural gas product.

3. Lower Impact Areas of Disagreement

Below we discuss areas that are of concern for the same reasons as the items discussed above, but have a smaller impact on the expected VOS rate. The following table summarizes the impact of these components. Again, these numbers should be considered preliminary.

	DOC Methodology ($/kWh)	**Company Avoided Cost Distributed PV Value ($/kWh)**	**Difference**
Avoided Distribution Capacity Cost	$0.004	$0.001	$0.003
Avoided Reserve Capacity Cost	$0.003	$0.000	$0.003

a. Avoided Distribution Capacity Cost

The proposed methodology includes two options for calculating avoided distribution capacity cost—system-wide avoided costs and location-specific avoided costs. Under the system-wide approach, assumptions about future distribution capacity investments are based on capacity investments (as identified by FERC account) and peak demand growth rates over the past 10 years. This cost is escalated each year. Under the location-specific approach, the avoided distribution capacity costs are based on planned capital investments in a given planning area.

Though we would like to reserve the option to select which option to use at the time of an actual rate filing, we currently prefer the system-wide approach. We propose a

few modifications and clarifications to the system approach to better reflect the cost of actual capacity investments. We discuss these recommendations below.

i. Cost Per Unit Growth

The basis of the system-wide approach under the proposed methodology is the cost per unit growth and the assumption that future growth is equivalent to historical growth. Cost per unit growth is calculated by dividing 10 years of historical capacity costs by the growth in peak load over that period.

There are several reasons why cost may not be correlated to growth, making this relationship problematic for predicting future distribution capacity costs. Capacity investments can be driven by reliability issues, not load growth, such the addition of a second feeder to provide redundancy in case of equipment failure. For example, at our Bassett Creek substation we are completing the installation of a second transformer and switchgear to accommodate up to five additional feeders. Prior to the project, the loss of the single transformer would result in extended customer outages. The additional transformer and feeders will mitigate that high consequence risk and the reliability risks associated with the loss of certain feeder cable segments.

Additionally, capacity investments are typically based on projected needs over a longer time horizon, while growth is measured in the present. Thus, investments that are being made now may not directly relate to today's load growth, but anticipated future growth. Alternately, some capacity investments may be driven by past periods of strong load growth. In either case, there is not a strong or reliable correlation between annual capacity investment and annual load growth, making the methodology problematic.

An example helps illustrate this point. If we assume deferrable distribution costs over a 10-year period were $100 million and peak load growth was only 10,000 kW, the result would be a cost of $10,000 per kW, which is clearly not reasonable. At the same time, if peak load growth was zero or declined due to recession or other factors over the 10-year period, the methodology would produce a null value if growth is zero or a negative distribution credit rate if growth were negative.

We believe the methodology should reflect actual costs per installed capacity. This could be achieved by sampling past projects and calculating the cost per installed kW of those projects. This calculation would be more representative of current costs associated with the types of projects the Company is undertaking to maintain and expand its distribution system.

ii. Deferred Cost Calculation

We agree that the identified FERC accounts contain costs that, when included in the system-wide valuation, are affected by deferment due to solar. Because these accounts also contain costs incurred due to other drivers, such as equipment replacement and new extensions, the portion deferrable due to solar must be adjusted to reflect only that due to deferrable capacity. We note that the methodology is unclear as to how the portion that is deferrable should be derived. We recommend the calculation be adjusted to consider only costs related to capacity additions.

In addition, we also seek clarification on where to input our deferred costs. The methodology is unclear as to how we could make adjustments for partial deferral of new capacity and how those deferred costs should be used in Table 15 (Economic value of avoided distribution capacity cost, system wide).

We note that our initial evaluation suggests there are very few feeders where solar has the potential to avoid or defer distribution investment. This is partly due to the peak demand of residential customers occurring later in the evening after solar resources have stopped producing energy and the intermittent nature of solar. The implication is that solar may have little to no impact on the peak demand of residential distribution systems.

As discussed above and recognized by the integration cost placeholder, the addition of distributed solar to the distribution grid will result in increased capital expenditures, as well as operating costs, over the long term. Because the potential to avoid distribution (and transmission) investments due to distributed solar is limited, the distribution value may become negative at some point as a result of growing integration costs. We will continue to monitor this issue as solar penetration increases.

b. Avoided Reserve Capacity Cost

The reserve capacity cost represents the capital cost of generation to meet planning margins. The methodology derives avoided reserve capacity cost by multiplying the avoided generation capacity cost by the assumed reserve capacity margin percent.

We believe avoided reserve capacity cost should be excluded from the methodology or calculated as zero because it contradicts FERC's finding that resources such as distributed solar do not lower reserve margin requirements. Thus, the proposed methodology is at odds with how reserve capacity credit is calculated in actual markets.

Given a recent FERC Order, it is inappropriate to assume solar would reduce margin requirements and avoid any associated costs. In FERC Dockets Nos. ER08-394-004 and ER08-394-005 related to long term resource adequacy in MISO, FERC determined that resources such as distributed solar should not be netted from load and would, therefore, not create a reserve capacity benefit. They should be treated as other resources that are subject to outages. Specifically, the Commission's determination states:

> We disagree with the assessment that behind-the-meter generation is different from other generation resources on the transmission system as it relates to reliability and resource planning purposes. As recognized by the Midwest ISO, the Ohio Commission and a number of market participants, behind-the-meter generation has similar operating characteristics as other generation resources (e.g., both are involved in the physical production of energy and subject to outages), and therefore comparable treatment, in terms of a planning reserve margin to ensure resource adequacy in the event of generation resource outages, is appropriate. [12]

Reserve margin is required based on total load not generation. Since solar generation cannot be accounted for as an offset to load, loads are not reduced and consequently reserve capacity margins under MISO Tariff and business practices are not reduced. MISO has structured its resource adequacy to reflect this ruling. Providing avoided reserve capacity credit to distributed solar would directly conflict with established MISO rules on resource adequacy and pay for a cost that solar cannot presently avoid.

c. Marginal Losses

We note that if losses associated with all uses of the transmission and distribution systems were calculated on a marginal basis, the sum of all the losses would total more than the actual losses. This is why, for example, when MISO settles their energy market, they tie the loss settlements back to average losses, so as not to over-collect for the amount of actual losses. This is also why FERC, when setting loss percents for wholesale use of the transmission grid, allows reimbursement for utilities associated with losses on an average system loss basis.

d. Load Match Analysis - Distribution

The proposed peak load reduction (PLR) does not reflect the inherent variability of solar or recognize that different customer classes have different load peaks because it is based on the coincident system peak. This is problematic because distribution

[12] United States of America Federal Energy Regulatory Commission. Docket Nos. ER08-394-004 & ER08-394-005. Order on Rehearing and Compliance Issued February 19th 2009.

substations and circuits show significant variations in peaking times, and often do not peak at the same time as the system as a whole. For instance, commercial feeders tend to peak in the 4-5 p.m. hour while a majority of residential feeders peak in the 6-8 p.m. timeframe. In order to address these deficiencies, we recommend that an average PLR be calculated based on each utility's unique customer mix.

CONCLUSION

We appreciate the work of the Department and their consultants, as well as the other stakeholders, in supporting the development of the VOS methodology. We believe the VOS framework has the potential to expand distributed solar in Minnesota in a way that is fair to all customers. We respectfully request the Commission recommend our modifications to the Department to best deliver on that goal. Should the resulting VOS rate be below the retail rate or otherwise insufficient to achieve the desired solar market activity, we agree to work with parties on increased or additional incentives that allow the VOS to fulfill its objectives while creating a vibrant distributed solar industry.

Dated: February 13, 2014

Northern States Power Company

Comparison of DOC Methodology and Company Recommendations

Preliminary Analysis

	DOC Methodology Distributed PV Value ($/kWh)	Company Avoided Cost Distributed PV Value ($/kWh)	Difference
Avoided Fuel Cost	$0.056	$0.045	$0.011
Avoided Plan O&M - Fixed	$0.002	$0.001	$0.001
Avoided Plan O&M - Variable	$0.001	$0.001	$0.000
Avoided Gen Capacity Cost	$0.034	$0.012	$0.022
Avoided Reserve Capacity Cost	$0.003	$0.000	$0.003
Avoided Trans Capacity Cost	$0.014	$0.000	$0.014
Avoided Distribution Capacity Cost	$0.004	$0.001	$0.003
Avoided Environmental Cost	$0.030	$0.013	$0.017
Avoided Voltage Control Cost			
Solar Integration Cost			
TOTAL	**$0.145**	**$0.074**	$0.071

* We note that these numbers are preliminary and based on our initial analysis. Should we file for a VOS tariff, we would conduct a more comprehensive analysis.

CERTIFICATE OF SERVICE

I, SaGonna Thompson, hereby certify that I have this day served copies of the foregoing document or a summary thereof on the attached lists of persons:

xx by depositing a true and correct copy or summary thereof, properly enveloped with postage paid, in the United States Mail at Minneapolis, Minnesota; or

xx via electronic filing

DOCKET NO. E999/M-14-65

Dated this 13th day of February 2014

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John	Kluempke	jwkluempke@winlectric.com	Elk River Winlectric	12777 Meadowvale Rd Elk River, MN 55330	Electronic Service	No	SPL_SL_14-65_Interested Parties
Thomas G.	Koehler	N/A	Local Union #160, IBEW	2909 Anthony Ln Minneapolis, MN 55418-3238	Paper Service	No	SPL_SL_14-65_Interested Parties
Mara	Koeller	mara.n.koeller@xcelenergy.com	Xcel Energy	414 Nicollet Mall 5th Floor Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Jon	Kramer	jk2surf@aol.com	Sundial Solar	4708 york ave. S Minneapolis, MN 55410	Electronic Service	No	SPL_SL_14-65_Interested Parties
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	SPL_SL_14-65_Interested Parties
Allen	Krug	allen.krug@xcelenergy.com	Xcel Energy	414 Nicollet Mall-7th fl Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Scott	Kurtz	Scott.J.Kurtz@xcelenergy.com	Xcel Energy	825 Rice Street St. Paul, MN 55117	Electronic Service	No	SPL_SL_14-65_Interested Parties
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	SPL_SL_14-65_Interested Parties

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Deborah Fohr	Levchak	dlevchak@bepc.com	Basin Electric Power Cooperative	1717 East Interstate Avenue Bismarck, ND 585030564	Paper Service	No	SPL_SL_14-65_Interested Parties
Amy	Liberkowski	amy.a.liberkowski@xcelenergy.com	Xcel Energy	414 Nicollet Mall 7th Floor Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_14-65_Interested Parties
John	Lindell	agorud.ecf@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	Yes	SPL_SL_14-65_Interested Parties
Mark	Lindquist	N/A	The Minnesota Project	57107 422nd St New Ulm, MN 56073-4321	Paper Service	No	SPL_SL_14-65_Interested Parties
Matthew P	Loftus	matthew.p.loftus@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 5 Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Bob	Long	rlong@larkinhoffman.com	Larkin Hoffman (Silicon Energy)	1500 Wells Fargo Plaza 7900 Xerxes Ave S Bloomington, MN 55431	Paper Service	No	SPL_SL_14-65_Interested Parties
Rebecca	Lundberg	rebecca.lundberg@powerfullygreen.com	Powerfully Green	11451 Oregon Ave N Champlin, MN 55316	Electronic Service	No	SPL_SL_14-65_Interested Parties
Paula	Maccabee	Pmaccabee@justchangelaw.com	Just Change Law Offices	1961 Selby Avenue St. Paul, MN 55104	Paper Service	No	SPL_SL_14-65_Interested Parties
Casey	Maccullum	casey@appliedenergyinnovations.org	Applied Energy Innovations	4000 Minnehaha Ave S Minneapolis, MN 55406	Paper Service	No	SPL_SL_14-65_Interested Parties
Susan	Mackenzie	susan.mackenzie@state.mn.us	Public Utilities Commission	Suite 350121 7th Place East St. Paul, MN 551012147	Electronic Service	No	SPL_SL_14-65_Interested Parties

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Kavita	Maini	kmaini@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	SPL_SL_14-65_Interested Parties
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	SPL_SL_14-65_Interested Parties
Mary	Martinka	mary.a.martinka@xcelenergy.com	Xcel Energy Inc	414 Nicollet Mall 7th Floor Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Mike	McDowell		Heartland Consumers Power District	PO Box 248 Madison, SD 570420248	Paper Service	No	SPL_SL_14-65_Interested Parties
Natalie	McIntire	natalie.mcintire@gmail.com	Wind on the Wires	570 Asbury St Ste 201 St. Paul, MN 55104-1850	Paper Service	No	SPL_SL_14-65_Interested Parties
Dave	McNary	N/A	Hennepin County DES	701 Fourth Avenue South suite 700 Minneapolis, MN 55415-1842	Paper Service	No	SPL_SL_14-65_Interested Parties
John	McWilliams	jmm@dairynet.com	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	SPL_SL_14-65_Interested Parties
Valerie	Means	valerie.means@lawmoss.com	Moss & Barnett	Suite 4800 90 South Seventh Street Minneapolis, MN 55402	Electronic Service	No	SPL_SL_14-65_Interested Parties
Brian	Millberg	Brian.Millberg@minneapolismn.gov	City of Minneapolis	350 South 5th St, #315 Minneapolis, MN 55415	Paper Service	No	SPL_SL_14-65_Interested Parties
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	SPL_SL_14-65_Interested Parties

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David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	SPL_SL_14-65_Interested Parties
Andrew	Moratzka	apmoratzka@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	SPL_SL_14-65_Interested Parties
Martin	Morud	mmorud@trunorthsolar.com	Tru North Solar	5115 45th Ave S Minneapolis, MN 55417	Electronic Service	No	SPL_SL_14-65_Interested Parties
Ben	Nelson		CMMPA	459 South Grove Street Blue Earth, MN 56013	Paper Service	No	SPL_SL_14-65_Interested Parties
David W.	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	Suite 300 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	SPL_SL_14-65_Interested Parties
Michael	Noble	noble@fresh-energy.org	Fresh Energy	Hamm Bldg., Suite 220 408 St. Peter Street St. Paul, MN 55102	Electronic Service	No	SPL_SL_14-65_Interested Parties
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220 Minneapolis, MN 55407-1229	Electronic Service	No	SPL_SL_14-65_Interested Parties
Kate	O'Connell	kate.oconnell@state.mn.us	Department of Commerce	Suite 50085 Seventh Place East St. Paul, MN 551012198	Electronic Service	No	SPL_SL_14-65_Interested Parties
Nick	Paluck	nick.paluck@xcelenergy.com	Xcel Energy	7th Floor 414 Nicollet Mall Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_14-65_Interested Parties
James	Pearson	james.g.pearson@xcelenergy.com	Xcel Energy	414 Nicollet Mall Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties

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Mary Beth	Peranteau	mperanteau@wheelerlaw.com	Wheeler Van Sickle & Anderson SC	Suite 801 25 West Main Street Madison, WI 537033398	Electronic Service	No	SPL_SL_14-65_Interested Parties
Donna	Pickard	dpickard@aladdinsolar.com	Aladdin Solar	1215 Lilac Lane Excelsior, MN 55331	Electronic Service	No	SPL_SL_14-65_Interested Parties
Charlie	Pickard	cpickard@aladdinsolar.com	Aladdin Solar	1215 Lilac Lane Excelsior, MN 55331	Electronic Service	No	SPL_SL_14-65_Interested Parties
Joseph V.	Plumbo		Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Paper Service	No	SPL_SL_14-65_Interested Parties
Gayle	Prest	gayle.prest@minneapolismn.gov	City of Mpls Sustainability	350 South 5th St, #315 Minneapolis, MN 55415	Paper Service	No	SPL_SL_14-65_Interested Parties
Kent	Ragsdale	kentragsdale@alliantenergy.com	Alliant Energy-Interstate Power and Light Company	P.O. Box 351 200 First Street, SE Cedar Rapids, IA 524060351	Electronic Service	No	SPL_SL_14-65_Interested Parties
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John C.	Reinhardt		Laura A. Reinhardt	3552 26Th Avenue South Minneapolis, MN 55406	Paper Service	No	SPL_SL_14-65_Interested Parties
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Paper Service	No	SPL_SL_14-65_Interested Parties
Enio	Ricci	ericci@invenergyllc.com	Invenergy LLC	17830 New Hampshire Ave Ste 300 Ashton, MD 20861	Paper Service	No	SPL_SL_14-65_Interested Parties

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Trudy	Richter	trichter@rranow.com	Minnesota Resource Recovery Assn.	477 Selby Avenue St. Paul, MN 55102	Paper Service	No	SPL_SL_14-65_Interested Parties
Michelle	Rosier	michelle.rosier@sierraclub.org	Sierra Club	2327 E. Franklin Avenue Minneapolis, MN 554061024	Paper Service	No	SPL_SL_14-65_Interested Parties
Craig	Rustad	crustad@minnkota.com	Minnkota Power	1822 Mill Road PO Box 13200 Grand Forks, ND 582083200	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Raymond	Sand	rms@dairynet.com	Dairyland Power Cooperative	P.O. Box 8173200 East Avenue South LaCrosse, WI 546020817	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	12 S 6th St Ste 1137 Minneapolis, MN 55402	Electronic Service	No	SPL_SL_14-65_Interested Parties
Matthew J.	Schuerger P.E.	mjsreg@earthlink.net	Energy Systems Consulting Services, LLC	PO Box 16129 St. Paul, MN 55116	Electronic Service	No	SPL_SL_14-65_Interested Parties
Kevin	Schwain	Kevin.D.Schwain@xcelenergy.com	Xcel Energy	404 Nicollet Mall Minneapolis, MN 55401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Dean	Sedgwick	N/A	Itasca Power Company	PO Box 457 Bigfork, MN 56628-0457	Paper Service	No	SPL_SL_14-65_Interested Parties

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Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	Ste 122 9100 W Bloomington Frwy Bloomington, MN 55431	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Doug	Shoemaker	dougs@mnRenewables.org	MRES	2928 5th Avenue South Minneapolis, MN 55408	Paper Service	No	SPL_SL_14-65_Interested Parties
Mrg	Simon	mrgsimon@mrenergy.com	Missouri River Energy Services	3724 W. Avera Drive P.O. Box 88920 Sioux Falls, SD 571098920	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Beth H.	Soholt	bsoholt@windonthewires.org	Wind on the Wires	570 Asbury Street Suite 201 St. Paul, MN 55104	Electronic Service	No	SPL_SL_14-65_Interested Parties
Chanti	Sourignavong	chantipal.sourignavong@honeywell.com	Honeywell	1985 Douglas Drive North MN10-111A Golden Valley, MN 55422-3992	Paper Service	No	SPL_SL_14-65_Interested Parties
Ron	Spangler, Jr.	rlspangler@otpco.com	Otter Tail Power Company	215 So. Cascade St. PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	SPL_SL_14-65_Interested Parties
Thomas P.	Sweeney III	tom.sweeney@easycleanenergy.com	Clean Energy Collective	P O Box 1828 Boulder, CO 80306-1828	Paper Service	No	SPL_SL_14-65_Interested Parties
SaGonna	Thompson	Regulatory.Records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_14-65_Interested Parties
Steve	Thompson		Central Minnesota Municipal Power Agency	459 S Grove St Blue Earth, MN 56013-2629	Paper Service	No	SPL_SL_14-65_Interested Parties
Pat	Treseler	pat.jcplaw@comcast.net	Paulson Law Office LTD	Suite 325 7301 Ohms Lane Edina, MN 55439	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Darryl	Tveitbakk		Northern Municipal Power Agency	123 Second Street West Thief River Falls, MN 56701	Paper Service	No	SPL_SL_14-65_Interested Parties

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Paul	White	paul.white@prcwind.com	Project Resources Corp./Tamarac Line LLC/Ridgewind	618 2nd Ave SE Minneapolis, MN 55414	Electronic Service	No	SPL_SL_14-65_Interested Parties
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Daniel	Williams	DanWilliams.mg@gmail.com	Powerfully Green	11451 Oregon Avenue N Champlin, MN 55316	Electronic Service	No	SPL_SL_14-65_Interested Parties
Steven	Wishart	steven.w.wishart@xcelenergy.com	Xcel Energy	7th Floor 414 Nicollet Mall Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_14-65_Interested Parties
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	SPL_SL_14-65_Interested Parties
Thomas J.	Zaremba		WHEELER, VAN SICKLE & ANDERSON	Suite 801 25 West Main Street Madison, WI 537033398	Paper Service	No	SPL_SL_14-65_Interested Parties