

February 22, 2019

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

**RE: CENTER FOR ENERGY AND ENVIRONMENT’S COMMENTS IN THE MATTER OF THE XCEL ENERGY’S INTEGRATED DISTRIBUTION PLAN FOR 2019-2028
DOCKET No. E002/CI-18-251**

Dear Mr. Wolf:

Center for Energy and Environment (“CEE”) is a research and implementation nonprofit with special expertise in energy efficiency that stretches back nearly 40 years. CEE employs more than 140 staff in the areas of technology research, energy efficiency programs and services, and clean energy policy and engagement. CEE submits these Comments as part of our policy work, through which we develop, evaluate, and pilot effective clean energy solutions.

CEE appreciates the opportunity to provide Comments in the Matter of Xcel Energy’s Integrated Distribution Plan (“IDP”) for 2019–2028 filed in the above referenced docket on November 1, 2018. We note that this is the first IDP filed by a Minnesota utility in response to the Minnesota Public Utilities Commission’s (“Commission”) decision to require IDP filings for certain electric utilities.¹ We thank the Commission for its proactive decision to require distribution plan reporting,² and we thank Xcel Energy for putting forth such an extensive and detailed IDP report, especially as the first Minnesota utility to do so. For these Comments, we will focus on the value that this report provides and future opportunities for Xcel Energy IDP reports, the value of the stakeholder process for Xcel Energy’s IDP, and specific areas of the report for which we have feedback or questions.

¹ The Commission will require Xcel Energy, Minnesota Power, Otter Tail Power Company, and Dakota Electric Association to file annual IDP reports. The IDP filing requirements for Xcel Energy were approved in the Commission’s August 30, 2018, Order in this docket.

² CEE is a co-founder and co-director of the e21 Initiative, along with our partners at the Great Plains Institute. The broad-based set of e21 stakeholders made recommendations for a proactive Commission-led approach to grid modernization and distribution planning in both Phase I and Phase II of the Initiative. See <http://e21initiative.org/progress/> for the whitepapers that detail these recommendations, as well as a list of the e21 stakeholders that collectively represent much of the broad public interest.

The Value of Xcel Energy's Integrated Distribution Plan Reporting

Distribution system planning is an essential operational task of the electric utility. In Minnesota, this planning has historically been done well by utilities, but with limited transparency or information sharing with regulators and stakeholders. In recent years the electric system has experienced swift and significant changes, including the need to invest in updated technology and infrastructure, increased deployment of distributed energy resources, higher penetrations of variable renewable electricity resources, and shifting customer expectations. These changes have increased the complexity and also the importance of distribution planning, and therefore necessitate a shift in how utilities approach this topic. Distribution planning will continue to focus on the best ways to deliver safe, reliable, and affordable service for utility customers. This will increasingly include identifying and integrating the spectrum of benefits offered by distributed energy resources and advancements in grid management.

Likewise, regulators and stakeholders require more detailed information and a better understanding of the utility's distribution system, how it is evolving, and how the utility's modernized grid plans will ensure customer benefits and lower total system costs. Recognizing that need, in 2018 the Commission decided to require certain electric utilities to file annual IDP reports. The systematic and proactive distribution planning approach outlined by the Commission's approved IDP requirements will support regulatory decision making and provide stakeholders with information on a wide spectrum of utility issues, investments, and programs.

At the broadest level, Minnesota's IDP reports are intended to ensure that utilities are minimizing costs and maximizing benefits through their distribution planning efforts. The IDP process can help minimize costs by ensuring that the toolbox of potential distribution system solutions is expanded so that planners consider the full suite of low-cost options to meet distribution system needs. The IDP process can maximize benefits by using input from stakeholders to make sure utilities are accurately assessing the opportunities and customer value of new technologies in addition to the benefits to their own systems. This will be especially important as we evaluate the costs and benefits of the advanced grid.

Central to the concept of maximizing benefits while minimizing costs will be a shift away from the mentality that distributed energy resources exist outside of the planned energy system and must be accommodated, to one that recognizes the system planning benefits of considering distributed energy resources holistically — allowing or even incentivizing distribution planners to harness them as resources and integrate multiple types of distributed energy resources to bring additional benefits. Load management and efficiency are particularly important in this regard, especially as consumer loads grow with new electrification technologies. Load management and energy efficiency take more time to acquire than traditional wires solutions, but may be cost-effective solutions to distribution system needs.

Additionally, the IDP filings provide regulators and stakeholders with a single place to track the various activities relevant to the changing distribution system, which will highlight connections and interactions between other utility dockets, investments, and programs (e.g. Xcel Energy's advanced meter rollout within its time-of-use pilot program, or the results of electric vehicle pilot

programs). These interrelated initiatives may interact with each other in a way that strains or benefits the grid. A holistic view may allow utilities, regulators, and stakeholders to avoid costly effects or maximize benefits of these interactions.

Xcel Energy's IDP for 2019–2028 (“Xcel Energy's IDP”) is the first of Minnesota's IDP filings. Xcel Energy's IDP is an extensive document with ample valuable information for regulators and stakeholders. We recognize that distribution planning is a large and complex effort and appreciate the work that went into making this plan comprehensive. We feel Xcel Energy's first plan fulfills a foundational purpose in educating regulators and stakeholders on the utility's distribution system and its planning process. We anticipate that future plans will evolve and be refined to illuminate how Xcel Energy's planning, investment, and management of the distribution system will continue to minimize costs and maximize benefits in the face of a changing grid.

We also believe that in future years there may be opportunities to streamline Xcel Energy's IDP report. As regulators and stakeholders become more knowledgeable about Xcel Energy's system and planning processes, much of the general information may no longer be needed. Further, we hope that through the regulatory and stakeholder processes, respective parties will identify the report's most useful information and determine the timeframe within which the information should be provided. Some information may be useful on an annual basis, some less frequently, and some may not be necessary at all. Below we will provide comments on specific content in Xcel Energy's IDP report and offer thoughts on which parts are most valuable and in what timeframe.

The Value of a Stakeholder Process

Before discussing specific content in Xcel Energy's IDP report, we will briefly comment on the value provided by the stakeholder process preceding the report and our hope for future stakeholder engagement on this topic. We commend the company for its genuine and open engagement with stakeholders ahead of its first IDP report. The stakeholder process was largely educational, which was beneficial and appropriate, especially leading up to an introductory plan. Stakeholders now have a better understanding of Xcel Energy's distribution system, how the company plans for and prioritizes the system's needs and budgets, and the limitations that the company faces with existing grid technology and tools. This knowledge will enable stakeholders to be constructive participants in the regulatory review process for the IDP report and other filings that address investments and operations of the distribution grid, distributed energy resources, and rates or tariffs pertaining to each. Likewise, we believe that the stakeholder meetings were educational for Xcel Energy in providing the company a better understanding of what stakeholders hoped to see in the IDP report.

Going forward, we encourage the company to continue to engage stakeholders in its IDP reports and to use these meetings as a platform for refining the information contained in future reports. Stakeholders could provide input on what information contained in this report is most useful, any additional information that should be included in future reports, and the timeline in which the information should be reported. In preparation for future meetings, we suggest that the company work with stakeholders and regulators to determine the topics that would be most useful to cover. We recommend the following possible topics be included: refining IDP content requirements,

reviewing the assumptions and approach for distributed energy resource scenarios, status updates for the company's advanced grid efforts, and updates on non-wires alternative projects. These forums could also be useful to discuss specific pilot projects.

Content-Specific Comments on Xcel Energy's Report

Below we will address specific portions and information within Xcel Energy's IDP report.

Non-Wires Alternatives

Xcel Energy provided a discussion of non-wires alternatives starting on page 76 of its IDP report. This section was useful and we believe that it will continue to become more relevant over time as the utility gains experience and information about non-wires alternatives in Minnesota.

In response to Section A, Viability of Non-Wires Alternatives by Project Type: We believe that distribution system capacity investments due to area load growth or high penetrations of distributed loads like EVs are likely the best opportunity for geotargeted energy efficiency and demand response to cost-effectively defer or avoid infrastructure investments. We believe that new construction may be another possible opportunity for geotargeting, in particular because new construction is an opportunity to engage with customers and make land-use decisions that will affect the cost of distributed energy resources — in other words, those costs are often lowest during this time. However, we recognize that in some instances of new construction there may not be enough distribution system savings to be cost-effective.

In response to Section C, Screening Process: We appreciate the thorough information provided on upcoming projects based on need, cost, and timeline. We believe these are three important parameters for determining the viability of non-wires alternatives. We also believe that the potential for distributed energy resources (DERs) based on customer load and other area factors is an important screening characteristic. These customer characteristics could include, for example, the mix of residential and commercial customer types, and the historical adoption of energy efficiency and demand response. In addition, the peak time window for a given project will determine which types of DERs are appropriate. We recognize this is a complex undertaking, but as screening processes become more sophisticated in future plans, we would encourage consideration of demand-side characteristics when prioritizing projects.

In Section E of the Non-Wires Alternatives section, Xcel Energy provided a description of CEE's Geotargeted Distributed Clean Energy Initiative ("geotargeting pilot project").³ As explained in the report, the geotargeting pilot project, led by CEE's research team, is intended to test the viability of using energy efficiency and demand response in a geographically targeted way to offset or defer upgrades to the distribution system. The pilot project will inform types of opportunities and the scale at which geotargeted distributed energy resources may cost-effectively reduce distribution system upgrades in Minnesota. The project is possible thanks to a grant from the Legislative

³ The description of the geotargeting pilot project report starts on page 88 of Xcel Energy's IDP report.

Citizen Commission on Minnesota Resources. Xcel Energy has been a very active and helpful partner in this pilot.

We are currently planning and preparing for the geotargeting pilot project and expect it to begin in spring 2019. The learning objectives of the geotargeting pilot project are as follows:

- What types of distribution system needs offer the best opportunity for distributed energy resources?
- To what extent can location-specific targeting with additional customer incentives lead to increased distributed energy resources?
- What customer end-use characteristics make for the best opportunities? Can the distributed energy resources screening process be automated?
- What is the statewide potential for geotargeting to defer infrastructure upgrades?
- What type of program and policy changes are needed to support geotargeting in Minnesota?

Geotargeting is an important application for distributed energy resources. Geotargeted distributed energy resources will not be beneficial or cost-effective in all cases, but can reduce costs while adding customer value in certain instances. Energy efficiency and demand response are technologies that have not traditionally been employed by distribution planners in order to offset of delay costly system upgrades. This pilot will aim to provide distribution planners with the information they will need in order to add these technological solutions to the distribution planning “toolbox.”

Much more will be learned as a result of this and other pilots, including the potential for non-wires alternatives and geotargeting to provide cost-effective alternatives to traditional grid investments. It is not possible to estimate the degree of potential at this early of a stage of distribution planning, particularly given that Xcel Energy’s near-term projected capital costs for distribution system investments are relatively low. It is notable that the flagship non-wires alternative project — the Brooklyn Queens Demand Management project that employed a mix of distributed energy resources to offset the cost of a substation investment — was four times Xcel Energy’s total annual distribution system capital budget in Minnesota.

Grid Modernization

Beginning on page 113 of its IDP report, Xcel Energy described its grid modernization efforts and related projects and initiatives. CEE notes that this section was particularly valuable and will be helpful to see in future reports. This section will be especially informative as Xcel Energy’s investments in grid modernization ramp up and as the costs and benefits of those technologies become more apparent and measurable.

On page 117 of the report, Xcel Energy discussed its Residential Time-of-Use Pilot project (“TOU pilot”). CEE commends the company for pursuing this pilot. We look forward to learning more

about the pilot and its impact on the distribution system. Once data from the TOU pilot becomes available, we hope the company will provide information on its effects in future IDP filings. We also look forward to any insights or lessons learned from the company's experience with the new field area network and advanced metering infrastructure through the TOU pilot, and we hope the company will include that discussion in a future report.

Customer and Operational Data Management

Beginning on page 150 of its IDP report, Xcel Energy overviewed its intent for use of customer and grid operational data. With the deployment of additional grid modernization technology, the customer and grid operational data to which Xcel Energy and its customers will have access will increase dramatically. Data collection and analysis should be driven by opportunities to obtain insights and drive action. To that end, Xcel Energy must develop approaches to simplify and standardize data collection, determine its uses for customer and grid data, and ensure that the data collected will be used. A key benefit of grid modernization is that the new troves of collected data will be managed and used to produce customer benefits and lower system costs. Data governance, analysis, access, and sharing are a central opportunities and challenges for utilities across the country. We hope Xcel Energy's next IDP will provide more specific details about Xcel Energy's comprehensive plans to manage and use data in a way that maximizes benefits to customers. The opportunity to use data to the benefit of customers and the system also requires that the Commission provide direction on matters of data governance, access, privacy, and other matters. Absent regulatory guidance, the management and use of data by the utility and its customers may be constrained or limited.

Distributed Energy Resource Forecasts and Methodologies

On page 194 of its IDP report, Xcel Energy described its methodology for forecasting energy efficiency. Xcel Energy notes in this section that the results of the statewide energy efficiency potential study were not available in time to include in the IDP report. Therefore, Xcel Energy provided a simple forecast of annual energy efficiency achievements equal to 1.5 percent of the company's sales going forward. Xcel Energy notes that they will use the results of the statewide energy efficiency potential study to develop energy efficiency scenarios for the company's next integrated resource plan ("IRP").

We hope that in its next IDP report, Xcel Energy will provide an updated energy efficiency forecast using the scenarios modeled in its IRP. If the energy efficiency scenarios in Xcel Energy's IRP differ from those filed and approved in its most recent Conservation Improvement Program ("CIP") Triennial Plan, we request that the company provide an additional energy efficiency forecast that includes the savings goals approved in its CIP Triennial Plan as well. Finally, to the extent possible, we request that the company provide some additional information or discussion about the effects of different energy efficiency achievement levels on its distribution system.

As discussed above in reference to the geotargeting pilot project, distributed energy resources like energy efficiency investments may be used to defer or avoid investments in distribution system

infrastructure updates in some cases. To do so, utilities must take a detailed look at where this potential exists in the distribution system. Xcel Energy rightly notes that forecasting distributed energy resources such as energy efficiency is complex, particularly at the distribution system or feeder level. Even with the best forecasting tools, such a localized forecast is uncertain.

Rather than trying to forecast for an entire complex system, we suggest that Xcel Energy start with some targeted examples. We recommend that the company pick certain points on the grid, like a particular feeder that may be especially stressed by the addition of a distributed energy resource that can increase expense or reduce reliability (e.g. an electric vehicle fleet charging location or additional photovoltaic systems in a neighborhood). We suggest that the company then analyze that point on the system to determine the current infrastructure's ability to handle additional distributed energy resources, as well as to identify which feeders will be stressed. The company could then model mitigation options and provide discussion of the exercise in future IDP reports.

Conclusion

CEE appreciates the opportunity to provide input on this docket and thanks the Commission for its consideration of our remarks.

Sincerely,

/s/

Jennifer Edwards
Director, CEE Innovation Exchange

BEFORE THE MINNESOTA DEPARTMENT OF COMMERCE
85 7th Place East, Suite 500
St. Paul, Minnesota 55101

AFFIDAVIT OF SERVICE

DOCKET NO. E002/CI-18-251

I, Lecam Trang, herby certify that on this 22nd day of February 2019, I served Center for Energy and Environment's *Comments in the Matter of Xcel Energy's Integrated Distribution Plan for 2019-2028* in Docket No. E002/CI-18-251 on the following persons on the attached Service Lists by:

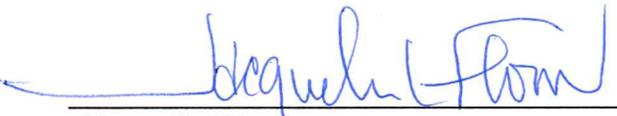
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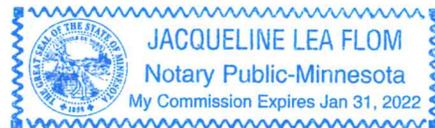


Lecam Trang

Subscribed and sworn to before me
this 22nd day of February 2019.



Notary Public



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_18-251_Official
David	Amster Olzweski	david@mysunshare.com	SunShare, LLC	1774 Platte St Denver, CO 80202	Electronic Service	No	OFF_SL_18-251_Official
Ellen	Anderson	ellena@umn.edu	325 Learning and Environmental Sciences	1954 Buford Ave Saint Paul, MN 55108	Electronic Service	No	OFF_SL_18-251_Official
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	OFF_SL_18-251_Official
Alison C	Archer	aarcher@misoenergy.org	MISO	2985 Ames Crossing Rd Eagan, MN 55121	Electronic Service	No	OFF_SL_18-251_Official
Donna	Attanasio	dattanasio@law.gwu.edu	George Washington University	2000 H Street NW Washington, DC 20052	Electronic Service	No	OFF_SL_18-251_Official
John	Bailey	bailey@ilsr.org	Institute For Local Self-Reliance	1313 5th St SE Ste 303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_18-251_Official
Kenneth	Baker	Ken.Baker@walmart.com	Wal-Mart Stores, Inc.	2001 SE 10th St. Bentonville, AR 72716-5530	Electronic Service	No	OFF_SL_18-251_Official
Sara	Baldwin Auck	sarab@irecusa.org	Interstate Renewable Energy Council, Inc.	PO Box 1156 Latham, NY 12110	Electronic Service	No	OFF_SL_18-251_Official
Gail	Baranko	gail.baranko@xcelenergy.com	Xcel Energy	414 Nicollet Mall7th Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James J.	Bertrand	james.bertrand@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Derek	Bertsch	derek.bertsch@mrenergy.com	Missouri River Energy Services	3724 West Avera Drive PO Box 88920 Sioux Falls, SD 57109-8920	Electronic Service	No	OFF_SL_18-251_Official
William	Black	bblack@mmua.org	MMUA	Suite 400 3025 Harbor Lane North Plymouth, MN 554475142	Electronic Service	No	OFF_SL_18-251_Official
Kenneth	Bradley	kbradley1965@gmail.com		2837 Emerson Ave S Apt CW112 Minneapolis, MN 55408	Electronic Service	No	OFF_SL_18-251_Official
Jon	Brekke	jbrekke@greenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_18-251_Official
Sydney R.	Briggs	sbriggs@swce.coop	Steele-Waseca Cooperative Electric	2411 W. Bridge St PO Box 485 Owatonna, MN 55060-0485	Electronic Service	No	OFF_SL_18-251_Official
Mark B.	Bring	mbring@otpc.com	Otter Tail Power Company	215 South Cascade Street PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_18-251_Official
Tony	Brunello	BADEMAIL-tbrunello@greentechleadership.org	Greentech Leadership Group	426 17th St Ste 700 Oakland, CA 94612-2850	Paper Service	No	OFF_SL_18-251_Official
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000 Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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_18-251_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_18-251_Official
Jason	Burwen	j.burwen@energystorage.org	Energy Storage Association	1155 15th St NW, Ste 500 Washington, DC 20005	Electronic Service	No	OFF_SL_18-251_Official
Douglas M.	Carnival	dmc@mcgrannshea.com	McGrann Shea Carnival Straughn & Lamb	N/A	Electronic Service	No	OFF_SL_18-251_Official
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Electronic Service	No	OFF_SL_18-251_Official
Kenneth A.	Colburn	kcolburn@symbioticstrategies.com	Symbiotic Strategies, LLC	26 Winton Road Meredith, NH 32535413	Electronic Service	No	OFF_SL_18-251_Official
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_18-251_Official
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_18-251_Official
Arthur	Crowell	Crowell.arthur@yahoo.com	A Work of Art Solar	14333 Orchard Rd. Minnetonka, MN 55345	Electronic Service	No	OFF_SL_18-251_Official
David	Dahlberg	davedahlberg@nweco.com	Northwestern Wisconsin Electric Company	P.O. Box 9 104 South Pine Street Grantsburg, WI 548400009	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James	Denniston	james.r.denniston@xcelenergy.com	Xcel Energy Services, Inc.	414 Nicollet Mall, Fifth Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_18-251_Official
Curt	Dieren	curt.dieren@dgr.com	L&O Power Cooperative	1302 S Union St Rock Rapids, IA 51246	Electronic Service	No	OFF_SL_18-251_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_18-251_Official
Brian	Draxten	bhdraxten@otpc.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380498	Electronic Service	No	OFF_SL_18-251_Official
Kristen	Eide Tollefson	healingsystems69@gmail.com	R-CURE	28477 N Lake Ave Frontenac, MN 55026-1044	Electronic Service	No	OFF_SL_18-251_Official
Bob	Eleff	bob.eleff@house.mn	Regulated Industries Cmte	100 Rev Dr Martin Luther King Jr Blvd Room 600 St. Paul, MN 55155	Electronic Service	No	OFF_SL_18-251_Official
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_18-251_Official
Oncu	Er	oncu.er@avantenergy.com	Avant Energy, Agent for MMPA	220 S. Sixth St. Ste. 1300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
James C.	Erickson	jericksonkbc@gmail.com	Kelly Bay Consulting	17 Quechee St Superior, WI 54880-4421	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	Farrell	jfarrell@ilsr.org	Institute for Local Self-Reliance	1313 5th St SE #303 Minneapolis, MN 55414	Electronic Service	No	OFF_SL_18-251_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_18-251_Official
John	Fernandes	john.fernandes@res-americas.com	RES	11101 W. 120th Ave Suite 400 Broomfield, CO 80021	Paper Service	No	OFF_SL_18-251_Official
Nathan	Franzen	nathan@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_18-251_Official
John	Fuller	N/A	MN Senate	75 Rev Dr Martin Luther King Jr Blvd Room G-17 St. Paul, MN 55155	Paper Service	No	OFF_SL_18-251_Official
Hal	Galvin	halgalvin@comcast.net	Provectus Energy Development llc	1936 Kenwood Parkway Minneapolis, MN 55405	Electronic Service	No	OFF_SL_18-251_Official
Edward	Garvey	garveyed@aol.com	Residence	32 Lawton St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_18-251_Official
Bruce	Gerhardson	bgerhardson@otpc.com	Otter Tail Power Company	PO Box 496 215 S Cascade St Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_18-251_Official
Allen	Gleckner	gleckner@fresh-energy.org	Fresh Energy	408 St. Peter Street Ste 220 Saint Paul, Minnesota 55102	Electronic Service	No	OFF_SL_18-251_Official
Timothy	Gulden	info@winonarenewableenergy.com	Winona Renewable Energy, LLC	1449 Ridgewood Dr Winona, MN 55987	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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_18-251_Official
Todd	Headlee	theadlee@dvigridsolutions.com	Dominion Voltage, Inc.	701 E. Cary Street Richmond, VA 23219	Electronic Service	No	OFF_SL_18-251_Official
Duane	Hebert	duane.hebert@novelenergy.biz	Novel Energy Solutions	1628 2nd Ave SE Rochester, MN 55904	Electronic Service	No	OFF_SL_18-251_Official
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Jared	Hendricks	hendricksj@owatonnautilities.com	Owatonna Public Utilities	PO Box 800 208 S Walnut Ave Owatonna, MN 55060-2940	Electronic Service	No	OFF_SL_18-251_Official
Annete	Henkel	mui@mutilityinvestors.org	Minnesota Utility Investors	413 Wacouta Street #230 St. Paul, MN 55101	Electronic Service	No	OFF_SL_18-251_Official
Shane	Henriksen	shane.henriksen@enbridge.com	Enbridge Energy Company, Inc.	1409 Hammond Ave FL 2 Superior, WI 54880	Electronic Service	No	OFF_SL_18-251_Official
Paul	Hernandez	Paul.Hernandez@energycenter.org	Center for Sustainable Energy	426 17th Street, Suite 700 Oakland, CA 94612	Electronic Service	No	OFF_SL_18-251_Official
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue St. Paul, MN 55130	Electronic Service	No	OFF_SL_18-251_Official
Lori	Hoyum	lhoyum@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jan	Hubbard	jan.hubbard@comcast.net		7730 Mississippi Lane Brooklyn Park, MN 55444	Electronic Service	No	OFF_SL_18-251_Official
Casey	Jacobson	cjacobson@bepc.com	Basin Electric Power Cooperative	1717 East Interstate Avenue Bismarck, ND 58501	Electronic Service	No	OFF_SL_18-251_Official
Ralph	Jacobson	ralphj@ips-solar.com		2126 Roblyn Avenue Saint Paul, Minnesota 55104	Electronic Service	No	OFF_SL_18-251_Official
John S.	Jaffray	jjaffray@jirpower.com	JJR Power	350 Highway 7 Suite 236 Excelsior, MN 55331	Electronic Service	No	OFF_SL_18-251_Official
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_18-251_Official
Richard	Johnson	Rick.Johnson@lawmoss.com	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Nate	Jones	njones@hcpd.com	Heartland Consumers Power	PO Box 248 Madison, SD 57042	Electronic Service	No	OFF_SL_18-251_Official
Michael	Kampmeyer	mkampmeyer@a-e-group.com	AEG Group, LLC	260 Salem Church Road Sunfish Lake, Minnesota 55118	Electronic Service	No	OFF_SL_18-251_Official
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jennifer	Kefer	jennifer@dgardiner.com	Alliance for Industrial Efficiency	David Gardiner & Associates, LLC 2609 11th St N Arlington, VA 22201-2825	Electronic Service	No	OFF_SL_18-251_Official
Julie	Ketchum	N/A	Waste Management	20520 Keokuk Ave Ste 200 Lakeville, MN 55044	Paper Service	No	OFF_SL_18-251_Official
Brad	Klein	bklein@elpc.org	Environmental Law & Policy Center	35 E. Wacker Drive, Suite 1600 Suite 1600 Chicago, IL 60601	Electronic Service	No	OFF_SL_18-251_Official
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_18-251_Official
Brian	Krambeer	bkrambeer@tec.coop	Tri-County Electric Cooperative	PO Box 626 31110 Cooperative Way Rushford, MN 55971	Electronic Service	No	OFF_SL_18-251_Official
Jon	Kramer	sundialjon@gmail.com	Sundial Solar	3209 W 76th St Edina, MN 55435	Electronic Service	No	OFF_SL_18-251_Official
Michael	Krause	michaelkrause61@yahoo.com	Kandiyo Consulting, LLC	433 S 7th Street Suite 2025 Minneapolis, Minnesota 55415	Electronic Service	No	OFF_SL_18-251_Official
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Matthew	Lacey	Mlacey@grenergy.com	Great River Energy	12300 Elm Creek Boulevard Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James D.	Larson	james.larson@avantenergy.com	Avant Energy Services	220 S 6th St Ste 1300 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_18-251_Official
Dean	Leischow	dean@sunrisenrg.com	Sunrise Energy Ventures	315 Manitoba Ave Wayzata, MN 55391	Electronic Service	No	OFF_SL_18-251_Official
Annie	Levenson Falk	annief@cubminnesota.org	Citizens Utility Board of Minnesota	332 Minnesota Street, Suite W1360 St. Paul, MN 55101	Electronic Service	No	OFF_SL_18-251_Official
Benjamin	Lowe	N/A	Alevo USA Inc.	2321 Concord Parkway South Concord, North Carolina 28027	Paper Service	No	OFF_SL_18-251_Official
Susan	Ludwig	sludwig@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_18-251_Official
Kavita	Maini	kmairi@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_18-251_Official
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Electronic Service	No	OFF_SL_18-251_Official
Samuel	Mason	smason@beltramelectric.com	Beltrami Electric Cooperative, Inc.	4111 Technology Dr. NW PO Box 488 Bemidji, MN 56619-0488	Electronic Service	No	OFF_SL_18-251_Official

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Dave	McNary	David.McNary@hennepin.us	Hennepin County DES	701 Fourth Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	OFF_SL_18-251_Official
John	McWilliams	jmm@dairynet.com	Dairyland Power Cooperative	3200 East Ave SPO Box 817 La Crosse, WI 54601-7227	Electronic Service	No	OFF_SL_18-251_Official
Thomas	Melone	Thomas.Melone@AlcoUS.com	Minnesota Go Solar LLC	222 South 9th Street Suite 1600 Minneapolis, Minnesota 55120	Electronic Service	No	OFF_SL_18-251_Official
Herbert	Minke	hminke@allete.com	Minnesota Power	30 W Superior St Duluth, MN 55802	Electronic Service	No	OFF_SL_18-251_Official
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_18-251_Official
Dalene	Monsebroten	dalene@mncable.net	Northern Municipal Power Agency	123 2nd St W Thief River Falls, MN 56701	Electronic Service	No	OFF_SL_18-251_Official
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_Official
Michael	Murray	mmurray@missiondata.org	Mission:Data Coalition	1020 16th St Ste 20 Sacramento, CA 95814	Paper Service	No	OFF_SL_18-251_Official
Carl	Nelson	cnelson@mncee.org	Center for Energy and Environment	212 3rd Ave N Ste 560 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_18-251_Official
Ben	Nelson	benn@cmpasgroup.org	CMMPA	459 South Grove Street Blue Earth, MN 56013	Electronic Service	No	OFF_SL_18-251_Official

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Dale	Niezwaag	dniezwaag@bepec.com	Basin Electric Power Cooperative	1717 East Interstate Avenue Bismarck, ND 58503	Electronic Service	No	OFF_SL_18-251_Official
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_18-251_Official
Rolf	Nordstrom	rnordstrom@gpisd.net	Great Plains Institute	2801 21ST AVE S STE 220 Minneapolis, MN 55407-1229	Electronic Service	No	OFF_SL_18-251_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_18-251_Official
David	O'Brien	david.obrien@navigant.com	Navigant Consulting	77 South Bedford St Ste 400 Burlington, MA 01803	Electronic Service	No	OFF_SL_18-251_Official
Jeff	O'Neill	jeff.oneill@ci.monticello.mn.us	City of Monticello	505 Walnut Street Suite 1 Monticello, Minnesota 55362	Electronic Service	No	OFF_SL_18-251_Official
Russell	Olson	rolson@hcpd.com	Heartland Consumers Power District	PO Box 248 Madison, SD 570420248	Electronic Service	No	OFF_SL_18-251_Official
Dan	Patry	dpatry@sunedison.com	SunEdison	600 Clipper Drive Belmont, CA 94002	Electronic Service	No	OFF_SL_18-251_Official
Jeffrey C	Paulson	jeff.jcplaw@comcast.net	Paulson Law Office, Ltd.	4445 W 77th Street Suite 224 Edina, MN 55435	Electronic Service	No	OFF_SL_18-251_Official

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Joyce	Peppin	joyce@mrea.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	OFF_SL_18-251_Official
Mary Beth	Peranteau	mperanteau@wheelerlaw.com	Wheeler Van Sickle & Anderson SC	44 E. Mifflin Street, 10th Floor Madison, WI 53703	Electronic Service	No	OFF_SL_18-251_Official
Jennifer	Peterson	jjpeterson@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	OFF_SL_18-251_Official
Hannah	Polikov	hpolikov@aee.net	Advanced Energy Economy Institute	1000 Vermont Ave, Third Floor Washington, DC 20005	Electronic Service	No	OFF_SL_18-251_Official
David G.	Prazak	dprazak@otpc.com	Otter Tail Power Company	P.O. Box 496 215 South Cascade Street Fergus Falls, MN 565380496	Electronic Service	No	OFF_SL_18-251_Official
Gregory	Randa	granda@lakecountrypower.com	Lake Country Power	2810 Elida Drive Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_18-251_Official
Mark	Rathbun	mrathbun@greenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_18-251_Official
Michael	Reinertson	michael.reinertson@avantenergy.com	Avant Energy	220 S. Sixth St. Ste 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_18-251_Official
John C.	Reinhardt		Laura A. Reinhardt	3552 26Th Avenue South Minneapolis, MN 55406	Paper Service	No	OFF_SL_18-251_Official

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Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_18-251_Official
Robert K.	Sahr	bsahr@eastriver.coop	East River Electric Power Cooperative	P.O. Box 227 Madison, SD 57042	Electronic Service	No	OFF_SL_18-251_Official
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_18-251_Official
Thomas	Scharff	thomas.scharff@versoco.com	Verso Corp	600 High Street Wisconsin Rapids, WI 54495	Electronic Service	No	OFF_SL_18-251_Official
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	OFF_SL_18-251_Official
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	OFF_SL_18-251_Official
Kay	Schraeder	kschraeder@minnkota.com	Minnkota Power	5301 32nd Ave S Grand Forks, ND 58201	Electronic Service	No	OFF_SL_18-251_Official
Dean	Sedgwick	N/A	Itasca Power Company	PO Box 455 Spring Lake, MN 56680	Paper Service	No	OFF_SL_18-251_Official
Maria	Seidler	maria.seidler@dom.com	Dominion Energy Technology	120 Tredegar Street Richmond, Virginia 23219	Electronic Service	No	OFF_SL_18-251_Official

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William	Seuffert	Will.Seuffert@state.mn.us		75 Rev Martin Luther King Jr Blvd 130 State Capitol St. Paul, MN 55155	Electronic Service	No	OFF_SL_18-251_Official
David	Shaffer	shaff081@gmail.com	Minnesota Solar Energy Industries Project	1005 Fairmount Ave Saint Paul, MN 55105	Electronic Service	No	OFF_SL_18-251_Official
Patricia	Sharkey	psharkey@environmentallawcounsel.com	Midwest Cogeneration Association.	180 N. LaSalle Street Suite 3700 Chicago, Illinois 60601	Electronic Service	No	OFF_SL_18-251_Official
Bria	Shea	bria.e.shea@xcelenergy.com	Xcel Energy	414 Nicollet Mall Minneapolis, MN 55401	Electronic Service	No	OFF_SL_18-251_Official
Doug	Shoemaker	dougs@mnRenewables.org	Minnesota Renewable Energy	2928 5th Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_18-251_Official
Mrg	Simon	mrgsimon@mrenergy.com	Missouri River Energy Services	3724 W. Avera Drive P.O. Box 88920 Sioux Falls, SD 571098920	Electronic Service	No	OFF_SL_18-251_Official
Anne	Smart	anne.smart@chargepoint.com	ChargePoint, Inc.	254 E Hacienda Ave Campbell, CA 95008	Electronic Service	No	OFF_SL_18-251_Official
Trevor	Smith	trevor.smith@avantenergy.com	Avant Energy, Inc.	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_18-251_Official
Ken	Smith	ken.smith@evergreenenergy.com	Ever Green Energy	305 Saint Peter St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_18-251_Official
Joshua	Smith	joshua.smith@sierraclub.org		85 Second St FL 2 San Francisco, California 94105	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_18-251_Official
Beth H.	Soholt	bsoholt@windonthewires.org	Wind on the Wires	570 Asbury Street Suite 201 St. Paul, MN 55104	Electronic Service	No	OFF_SL_18-251_Official
Sky	Stanfield	stanfield@smwlaw.com	Shute, Mihaly & Weinberger	396 Hayes Street San Francisco, CA 94102	Electronic Service	No	OFF_SL_18-251_Official
Tom	Stanton	tstanton@nrri.org	NRRI	1080 Carmack Road Columbus, OH 43210	Electronic Service	No	OFF_SL_18-251_Official
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_18-251_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_18-251_Official
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_18-251_Official
Thomas P.	Sweeney III	tom.sweeney@easycleanenergy.com	Clean Energy Collective	P O Box 1828 Boulder, CO 80306-1828	Electronic Service	No	OFF_SL_18-251_Official
Lynnette	Sweet	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_18-251_Official
Steve	Thompson	stevet@cmpasgroup.org	Central Minnesota Municipal Power Agency	459 S Grove St Blue Earth, MN 56013-2629	Paper Service	No	OFF_SL_18-251_Official

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Stuart	Tommerdahl	stommerdahl@otpco.com	Otter Tail Power Company	215 S Cascade St PO Box 496 Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_18-251_Official
Pat	Treseler	pat.jcplaw@comcast.net	Paulson Law Office LTD	4445 W 77th Street Suite 224 Edina, MN 55435	Electronic Service	No	OFF_SL_18-251_Official
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_18-251_Official
Karen	Turnboom	karen.turnboom@versoco.com	Verso Corporation	100 Central Avenue Duluth, MN 55807	Electronic Service	No	OFF_SL_18-251_Official
Andrew	Twite	twite@fresh-energy.org	Fresh Energy	408 St. Peter Street, Ste. 220 St. Paul, MN 55102	Electronic Service	No	OFF_SL_18-251_Official
Lisa	Veith	lisa.veith@ci.stpaul.mn.us	City of St. Paul	400 City Hall and Courthouse 15 West Kellogg Blvd. St. Paul, MN 55102	Electronic Service	No	OFF_SL_18-251_Official
Roger	Warehime	warehimer@owatonnautilities.com	Owatonna Public Utilities	208 South WalnutPO Box 800 Owatonna, MN 55060	Electronic Service	No	OFF_SL_18-251_Official
Jenna	Warmuth	jwarmuth@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 55802-2093	Electronic Service	No	OFF_SL_18-251_Official
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	OFF_SL_18-251_Official

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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_18-251_Official
Thomas J.	Zaremba	TZaremba@wheelerlaw.com	WHEELER, VAN SICKLE & ANDERSON	44 E. Mifflin Street, 10th Floor Madison, WI 53703	Electronic Service	No	OFF_SL_18-251_Official
Christopher	Zibart	czibart@atcllc.com	American Transmission Company LLC	W234 N2000 Ridgeview Pkwy Court Waukesha, WI 53188-1022	Electronic Service	No	OFF_SL_18-251_Official