BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
600 North Robert Street
St. Paul, MN 55101

FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION
121 Seventh Place East, Suite 350
St Paul, MN 55101-2147

IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER COMPANY D/B/A XCEL ENERGY FOR APPROVAL OF COMPETITIVE RESOURCE ACQUISITION PROPOSAL AND CERTIFICATE OF NEED	PUC Docket No. E002/CN-12-1240 OAH Docket No. 8-2500-30760

DIRECT ATTACHMENTS OF CHRISTOPHER J. SHAW

ON BEHALF OF

THE DIVISION OF ENERGY RESOURCES OF THE MINNESOTA DEPARTMENT OF COMMERCE

SEPTEMBER 27, 2013

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Christopher J. Shaw
Minnesota Department of Commerce
Division of Energy Resources
85 7th Place East, Suite 500
St. Paul, Minnesota 55101-2198

EXPERIENCE:

Minnesota Department of Commerce-Division of Energy Resources
Public Utilities Rates Analyst Since 6/13, 8/06-6/12

Analyst in the following Dockets:

- Xcel Wind Acquisition, Docket Nos. E002/M-13-603, E002/M-13-716
- Xcel Energy Power Purchase Agreement (PPA), Docket No. E002/M-11-713
- Interstate Power and Light Rate Case – Wind Resource Costs, Docket No. E001/GR-10-276
- Xcel Gas Rate Case – Rate Design, Docket No. G002/GR-09-1153
- CenterPoint Energy Rate Case – Rate Design, Docket No. G008/GR-08-1075
- Xcel's Notice of Changed Circumstances regarding an Extended Power Uprate at the Prairie Island Nuclear Generating Plant, Docket No. E002/CN-08-509
- Xcel Energy Transmission Cost Recovery Riders, Docket Nos. E002/M-12-50 and E002/M-10-1064
- Otter Tail Power Company Transmission Cost Recovery Rider, Docket No. E017/M-10-1061
- Xcel Energy Merricourt and Nobles Wind Farm Projects, Docket No. E002/M-08-1437
- Otter Tail Power Company Renewable Rider, Docket No. E017/M-08-1529
- Multiple Xcel Energy Community Based Energy Development (C-BED) PPAs
- Missouri River Energy Services – Integrated Resource Plan, Docket No. ET10/RP-10-735
- CapX Transmission Lines – Certificate of Need, Docket ET2,E002/CN-06-1115

Minnesota Office of the Attorney General-Anti-Trust and Utilities Division
Assistant Attorney General 6/12-6/13
Advocated for residential and small business energy consumers on behalf of the Attorney General, including advocacy in Xcel Energy's recent rate case in Docket No E002/GR-12-961. Assisted in litigating a consumer fraud case and addressed Minnesota citizens' concerns regarding utilities issues.

EDUCATION:

University of Wisconsin Law School, Madison, WI
J.D., 2004

University of Wisconsin-Madison, Madison, WI
B.A., 2000
Major: Economics-Mathematical Emphasis

Professional Training:

Strategist (integrated resource planning model software) training Phase I (November 2007)
Strategist (integrated resource planning model software) training Phase II (February 2008)

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Docket Nos.:	E002/CN-12-1240		
Response To:	Christopher Shaw	Information Request No.	43
Date Received:	July 9, 2013	Response Date:	July 17, 2013

Request No.	
43	For solar facilities proposed to interconnect to Xcel's distribution system: Explain the interconnection process that will be used to interconnect to Xcel's distribution system? **Response: The majority of the applications will be processed through *Distributed Generation Interconnection Requirements,"* which are described in the *"Distributed Generation Standard Interconnection and Power Purchase Tariff,"* Section 10, of Xcel's Rate Book. For projects interconnecting to 69 kV or higher transmission facilities, the MISO interconnection process will be followed.** Does Xcel's Distributed Generation Standard Interconnection and Power Purchase Tariff (Section No. 10 of Xcel's Minnesota Electric Rate Book) apply? **Response: Geronimo is following the *Distributed Generation Interconnection Requirements,"* which are described in the *"Distributed Generation Standard Interconnection and Power Purchase Tariff,"* Section 10, of Xcel's Rate Book for those sites not connecting to facilities below 69kV. Geronimo is not proposing to use the Power Purchase Tariff but instead proposed the power purchase agreement included in Appendix J of the Distributed Solar Energy Proposal.** What work has been completed and what work would need to be completed before an interconnection agreement could be executed? **Response: Generation Interconnection Applications have been submitted and accepted for six (6) of the sites. Geronimo plans to submit the remainder of the applications within the next 45 days.** Who bears the costs associated with generation interconnection? Are all generation interconnection costs included in the Strategist Inputs included in Geronimo's bid?

Response by: Glen Skarbakka

Title: Vice President of Transmission

Response: Geronimo will bear all interconnection costs. All interconnection costs, including reimbursable costs to the utility, are included in the proposal.

What is the risk that the output from the facilities may be curtailed?

Response: Geronimo sized each respective project to equal approximately 20 percent of Xcel's peak load in each respective Distributed Energy Generation Zone. As such, the distributed generators will offset load in the area and have a low probability of curtailment.

Under what circumstances would Xcel be required to pay the facility for curtailed energy?

Response: This will depend upon the final form of contract between Xcel and Geronimo, but, generally, Geronimo would expect to be compensated for all energy produced by the facilities. Energy curtailed for system emergency, reliability or force majeure events would be non-compensable, and energy curtailed for economic or other discretionary reasons by Xcel would be compensable.

Response by: Glen Skarbakka

Title: Vice President of Transmission

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Docket Nos.:	E002/CN-12-1240	
Response To:	Christopher Shaw	Information Request No. 44
Date Received:	July 9, 2013	Response Date: July 17, 2013

Request No.	
44	For solar facilities proposed to interconnect to Xcel substations: **Response: We interpret this Information Request to apply to solar facilities interconnecting at the transmission voltage (69kV or higher) side of Xcel-substations. Solar facilities interconnecting at the distribution voltage (less than 69kV) side of the substations are addressed in Geronimo's response to IR. No. 43.** Explain where each generation interconnection request is in the MISO interconnection process. Include the MISO Project number, type of interconnection requested, point of interconnection, and date of application, and estimated date of completion. **Response: The MISO interconnection process has not been initiated for sites requiring transmission voltage interconnections. However, Geronimo does not anticipate any interconnection issues that would prevent the projects from proceeding based on our evaluations of the proposed sites, and our experience with interconnecting wind farms in this region.** Will the generators be responsible for any network upgrade costs? If so, will Xcel or the generator bear those costs? **Response: The Distributed Energy Generation Zones have been sited in areas with appreciably more load than generation to minimize transmission congestion and network upgrade costs. Geronimo will be responsible for any network upgrades.** Are all generation interconnection costs, including any network upgrade costs, included in the Strategist Inputs sent with Geronimo's bid? **Response: Yes** What is the risk that each generator will be curtailed, including curtailment directed by MISO?

Response by: Glen Skarbakka

Title: Vice President of Transmission

Response: The distribution interconnected projects are not subject to curtailment by MISO. The transmission interconnected projects are subject to the MISO tariff, including its curtailment provisions. However, siting the projects in areas with significantly more load than generation will minimize curtailments due to transmission congestion along with minimizing network upgrade costs.

Under what circumstances would Xcel be required to pay the facility for curtailed energy?

Response: This will depend upon the final form of contract between Xcel and Geronimo, but generally Geronimo would expect to be compensated for all energy produced by the facilities. Energy curtailed for system emergency, reliability or force majeure events would be non-compensable, and energy curtailed for economic or other discretionary reasons by Xcel would be compensable.

Response by: Glen Skarbakka

Title: Vice President of Transmission

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Docket Nos.:	E002/CN-12-1240	
Response To:	Christopher Shaw	Information Request No. 45
Date Received:	July 9, 2013	Response Date: July 17, 2013

Request No.	
45	Does Geronimo have site control for each proposed solar facility? If not, when will Geronimo obtain site control for any remaining proposed sites? **Response: Geronimo has site control for 17 sites, totaling up to 92 MW AC of installed capacity. Geronimo anticipates completing site control for the remaining and alternate sites by mid-August. As stated in the Distributed Solar Energy Proposal, Geronimo plans to make the locations of it proposed solar facilities public once it has secured site control for at least 100 MW AC of installed capacity.**

Response by: Nathan Franzen

Title: Director of Solar

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Docket Nos.:	E002/CN-12-1240	
Response To:	Christopher Shaw	Information Request No. 46
Date Received:	July 9, 2013	Response Date: July 17, 2013

Request No.	
46	Will Xcel will be responsible for any congestion charges between the point of interconnection and Xcel's load? Has Geronimo assessed the risk that Xcel may incur congestion charges that Xcel may not be able to adequately manage? **Response: Geronimo sized each respective project to equal to approximately 20 percent of Xcel's peak load in each respective Distributed Energy Generation Zone. As such, the vast majority of the energy produced will offset energy that would otherwise be provided from the transmission system. This will tend to reduce transmission congestion rather than increase it. This, along with the fact that the projects are interspersed with Xcel loads means that there will be little if any congestion costs between the generators and Xcel loads.**

Response by: Glen Skarbakka

Title: Vice President of Transmission

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E002/CN-12-1240

Date of Request: July 9, 2013

Requested From: Brian M. Meloy
Leonard, Street and Deinard
(On behalf of Calpine Corp.)

Response Due: July 19, 2013

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
47	Explain where the generation interconnection request for the Mankato Expansion is in the MISO interconnection process. Include the MISO Project number, type of interconnection requested, point of interconnection, and date of application, and estimated date of completion.

Response: MISO is in the process of performing a restudy for the Mankato Expansion (Project No. G261). Similar to the existing capacity at the Mankato Energy Center, Calpine is seeking to maintain Network Resource Interconnection Service (NRIS) for the Expansion at the existing point of interconnection (Xcel's Mankato Substation). MISO has indicated that they will distribute the final restudy report during the week of July 22nd and will initiate any required Facilities Study in August. Calpine will update the Department upon receipt of the MISO G261 restudy results.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 19, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E002/CN-12-1240

Date of Request: July 9, 2013

Requested From: Brian M. Meloy
Leonard, Street and Deinard
(On behalf of Calpine Corp.)

Response Due: July 19, 2013

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
48	Will Xcel or the generator bear the cost of any required network upgrades? Are all interconnection costs, including network upgrade costs, included in the Strategist Inputs included with Calpine's bid?

Response: Per Calpine's April 15th bid submission, Calpine expects that Xcel will bear the costs of any required network and interconnection upgrades. Calpine will provide additional information on potential interconnection and network upgrade costs once MISO completes the pending restudy.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 19, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E002/CN-12-1240 — Date of Request: July 9, 2013

Requested From: Brian M. Meloy, Leonard, Street and Deinard (On behalf of Calpine Corp.) — Response Due: July 19, 2013

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
49	What is the risk of curtailment for the Mankato Expansion?

Response: Subject to the terms of its Network Resource Interconnection Service agreement Calpine would not expect any curtailment other than during force majeure conditions.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 19, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E002/CN-12-1240 Date of Request: July 9, 2013

Requested From: Brian M. Meloy Response Due: July 19, 2013

Leonard, Street and Deinard
(On behalf of Calpine Corp.)

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

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[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
50	Under what circumstances would Xcel be required to pay the facility for curtailed energy?

Response: Calpine does not foresee any circumstances where Xcel would be required to pay the facility for curtailed energy.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 17, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

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Requested From: Brian M. Meloy
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(On behalf of Calpine Corp.)

Response Due: July 19, 2013

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

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[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
51	Are additional land rights beyond the 25-acre site owned by Calpine for the Mankato Energy Center necessary for the Mankato Expansion?

Response: No additional land rights are required.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 17, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

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Date of Request: July 9, 2013

Requested From: Brian M. Meloy
Leonard, Street and Deinard
(On behalf of Calpine Corp.)

Response Due: July 19, 2013

Analysts Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

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Request No.	
52	Will Xcel will be responsible for any congestion charges between the point of interconnection and Xcel's load? Has Calpine assessed the risk that Xcel may incur congestion charges that Xcel may not be able to adequately manage?

Response: Calpine is not aware of any historic congestion-related charges between the point of interconnection of the existing plant and Xcel's load. The existing Mankato facility is interconnected to Xcel's transmission system and Calpine would not expect that Xcel would incur any congestion charges between the Expansion and its load.

Response by: Champe Fisher

Title: Vice President of Commercial Development

Department: NA

Telephone: (302) 468-5325

Date: July 19, 2013

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Numbers: E002/CN-12-1240 Date of Request: July 9, 2013

Requested From: Eric F. Swanson
Winthrop & Weinstine P.A.
(On behalf of Invenergy) Response Due: July 19, 2013

Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
53	Explain where the generation interconnection request for the Cannon Falls Peaking Expansion and the Hampton Energy Center are in the MISO interconnection process. Include the MISO Project number, type of interconnection requested, point of interconnection, and date of application, and estimated date of completion. **RESPONSE:** Cannon Falls Peaking Expansion: • MISO Queue Position: J280 • Type of Interconnection Requested: Network Resource • Point of Interconnection: Cannon Falls 115kV Substation • Application Date: 3/18/2013 • Estimated Study Completion Date (DPP): August 2014

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

Hampton Energy Center:

- MISO Queue Position: J284
- Type of Interconnection Requested: Network Resource
- Point of Interconnection: Hampton Corners 345kV Substation
- Application Date: 5/20/2013
- Estimated Study Completion Date (DPP): August 2014

Response by: Craig Gordon

Title: Director

Department: Energy Marketing and Origination

Telephone: (312) 582-1467

List sources of information:

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Numbers: E002/CN-12-1240 Date of Request: July 9, 2013

Requested From: Eric F. Swanson
Winthrop & Weinstine P.A.
(Oh behalf of Invenergy) Response Due: July 19, 2013

Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

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Request No.	
54	Will Xcel or the generator bear the cost of any required network upgrades? Are all interconnection costs, including network upgrade costs, included in the Strategist Inputs sent with Invenergy's bid? **RESPONSE**: Cannon Falls: $7 million of anticipated interconnection charges were embedded in original pricing and were included in the Strategist Inputs. The $7 million amount assumed that the Hampton Corners 345kV Substation would be the point of interconnect and that approximately 8 miles of transmission lines would need to be constructed as a double circuit or underbuild on the proposed Rochester to Hampton transmission. Additionally, Invenergy proposed that the final tolling price reflect the actual incurred costs of interconnecting the facility. For every million dollar variance from the $7 million budget, the price will increase or decrease by $0.05/kw-month. Invenergy does not expect network upgrade costs for the interconnection at the Hampton Corners 345kV Substation.

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

Hampton Corners:

$4 million of anticipated interconnection charges were embedded in the original pricing and were included in the Strategist Inputs. Invenergy does not expect network upgrade costs for the interconnection at the Hampton Corners 345kV Substation.

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

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Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

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[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

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Request No.	
55	What is the risk of curtailment for the Cannon Falls Peaking Expansion and the Hampton Energy Center? **RESPONSE**: As indicated by the analysis of historical congestion pricing in the area of interconnection in Section 6.3 of the Cannon Falls Peaking Expansion Proposal and Section 6.3 of the Hampton Energy Center Proposal, Invenergy expects low curtailment risk for each project. The Hampton Corners 345kV Substation will be the terminus of two new 345kV Multi Value Projects further enhancing deliverability and decreasing curtailment risk.

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

State of Minnesota
DEPARTMENT OF COMMERCE
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Utility Information Request

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Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

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Request No.	
56	Under what circumstances would Xcel be required to pay the facility for curtailed energy? **RESPONSE**: Under no circumstance would Xcel be required to pay the facility for curtailed energy. Under the proposals submitted by Invenergy, Xcel would pay a monthly capacity charge, a start and VOM charge, but it would not be liable to pay the facility for curtailed energy. Additionally, because Xcel would be the Market Participant for the facilities, Xcel would be responsible for following to MISO's dispatch signals, which means it would start, operate, and stop operation according to MISO's economic dispatch instructions.

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

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Utility Information Request

Docket Numbers: E002/CN-12-1240 Date of Request: July 9, 2013

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Winthrop & Weinstine P.A.
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Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

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Request No.	
57	Does Invenergy own or has it obtained site control of the 20 acre site for the proposed Hampton Energy Center? **RESPONSE**: Yes, Invenergy has site control for the 20 acre site for the proposed Hampton Energy Center. Invenergy has entered into a 3 year option agreement for the purchase of a 20 acre parcel adjacent to the proposed Hampton Substation. Invenergy anticipates that all construction activity and water detention will be contained within this site and no further land will be necessary for project infrastructure.

Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Numbers: E002/CN-12-1240 Date of Request: July 9, 2013

Requested From: Eric F. Swanson
Winthrop & Weinstine P.A.
(On behalf of Invenergy) Response Due: July 19, 2013

Analyst Requesting Information: Christopher Shaw

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
58	Will Xcel will be responsible for any congestion charges between the point of interconnection and Xcel's load? Has Invenergy assessed the risk that Xcel may incur congestion charges that Xcel may not be able to adequately manage? **RESPONSE**: Yes, as indicated in each proposal, Xcel would be responsible for congestion charges between the delivery point and Xcel's load. However, as noted in the proposals, the historical congestion charges have been relatively small, and the correlation between the NSP load zone and the delivery point has been strong, meaning that significant congestion blowouts are unlikely. The risk of significant congestion charges is also diminished since the delivery point is geographically within the Xcel load zone.

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Response by: Craig Gordon
Title: Director
Department: Energy Marketing and Origination
Telephone: (312) 582-1467

List sources of information:

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Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 059
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

Explain where the generation interconnection request for Black Dog Unit 6 and the two Red River Valley peaking units are in the MISO interconnection process. Include the MISO Project number, type of interconnection requested, point of interconnection, and date of application, and estimated date of completion.

Response:

Black Dog Unit 6 and the Red River Valley peaking units have not entered the MISO Generator Interconnection Process ("GIP") at this time. The Company intends to enter the MISO GIP following approval of the projects.

The Company plans on requesting Network Resource Interconnection Service ("NRIS") for Black Dog Unit 6 and the Red River Valley units. The requested interconnection points will be Xcel Energy's Black Dog 115 kV substation for Black Dog Unit 6, and Otter Tail Power Company's Hankinson 230 kV substation for the Red River Valley units. The MISO GIP process is expected to take around twelve months to complete, following the start of the MISO generator interconnection system impact studies.

While Black Dog Unit 6 will be required to participate in the MISO GIP, the Company intends to utilize the existing interconnection rights of Black Dog Units 3 and 4, which will be retired, for Unit 6. The MISO GIP has provisions that allow the owner or operator of a generator resource to retain its interconnection rights.

Preparer: Randall Oye
Title: Transmission Access Analyst
Department: Market Operations
Telephone: 612-330-2886
Date: July 23, 2013

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Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 060
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

Will Xcel incur costs for network upgrades associated with the interconnection of the proposed facilities? Are all costs of interconnection, including any required network upgrades associated with the proposed facilities, included in the Strategist Inputs included with Xcel's bid?

Response:

The Company does not foresee any needed network upgrades associated with its proposed Black Dog Unit 6.

In its proposal, the Company identified the likely need for two network upgrades to interconnect the Red River Valley units: 1) completion of the Big Stone-Brookings County 345 kV transmission line; and 2) rebuilding the Hankinson-Wahpeton 230 kV transmission line. The Big Stone-Brookings County line is part of MISO's MVP Portfolio and so its costs will not be assigned to the Red River Valley generation plant. The Hankinson-Wahpeton 230 kV line rebuild will only be required to interconnect the second Red River Valley unit, not the first. The Company will be responsible for any cost associated with upgrading the Hankinson to Wahpeton 230 kV line.

The Strategist inputs used for the Company's proposal included estimates of all the project estimated interconnection costs and any required network upgrades.

Preparer: Randall Oye
Title: Transmission Access Analyst
Department: Market Operations
Telephone: 612-330-2886
Date: July 23, 2013

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Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 061
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

What is the risk of curtailment for Black Dog Unit 6 and the two Red River Valley peaking units? Are their specific risks associated with North Dakota Export Constraint the may limit the availability of the Red River Valley Units to meet Xcel's needs?

Response:

The Company does not believe there is a curtailment risk associated with Black Dog 6 and the Red River Valley peaking units. Curtailment is a response to imbalances between energy supply and demand, and is primarily related to the inability of the transmission grid to accommodate available intermittent generation, such as wind generation during non-peak conditions. Black Dog Unit 6 and the Red River Valley units are simple cycle peaking generating units that will only be dispatched when the demand for energy is at its highest.

The Company does not believe there is a risk that the North Dakota Export (NDEX) constraints will limit the availability of the Red River Valley peaking units. These units are simple cycle combustion turbines that will only be dispatched when loads are at their highest. During these high system loads, NDEX will not approach its export limits because more North Dakota and South Dakota generation is required to supply local load and less is available for export.

Preparer: Randall Oye
Title: Transmission Access Analyst
Department: Market Operations
Telephone: 612-330-2886
Date: July 23, 2013

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Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 062
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

It is the Department's understanding that, for all proposals, Xcel will be responsible for any congestion charges between the point of interconnection and Xcel's load. As such, Xcel will be responsible for appropriately managing the risk of congestion on behalf of ratepayers through its hedging strategies. Do any of the proposals present risks of congestion charges that Xcel will not be able to adequately manage? If yes, please provide a complete and detailed explanation.

Response:

The Company will be responsible for congestion charges associated with its own proposal, the proposals of Calpine and Invenergy, and any portion of the Geronimo Energy proposal that interconnects to the MISO transmission grid. The Company would not be subject to congestion charges for the Great River Energy proposal, nor for any portion of the Geronimo Energy proposal that interconnects to the Company's distribution system.

Based on a preliminary analysis, the Company does not believe that any of the proposals will have significant congestion charges. The Company performed a preliminary historical LMP analysis[1] for the time period January 2012 - June 2013, comparing average LMP prices between a proposed project's location and the closest NSP load.[2] Both Day Ahead and Real Time LMP prices were evaluated. These preliminary results are provided in Table 1 below.

[1] The Geronimo proposal was not evaluated because we did not have sufficient information on the locations of the various solar sites.
[2] CPNODES used for each project are as follows: Black Dog Project - NSP.BLKDO3 (Black Dog Unit 3); Red River Valley Project - OTP.HOOTL2 (OTP Hoot Lake); Mankato Energy Center Project – average of NSP.MANKATECG2 and NSP.MANKATECG3 (Mankato Energy Center Units 2 & 3); Cannon Falls Project - NSP.CANFLSG1 (Cannon Falls Unit 1); Hampton Energy Center – average of NSP.BLUE_LK7 and NSP.PRISL1 (Blue Lake Unit 7 and Prairie Island Unit 1)

Table 1: Preliminary LMP Analysis Results for January 1, 2012 to June 20, 2013

Project	Day Ahead			Real Time		
	Average Project LMP	Average Load LMP	Average LMP Basis Differential (Project LMP minus Load LMP)	Average Project LMP	Average Load LMP	Average LMP Basis Differential (Project LMP minus Load LMP)
Black Dog Unit 6	$27.35	$27.57	-$0.22	$27.63	$27.75	-$0.12
Red River Valley [3]	$25.41	$26.11	-$0.70	$27.04	$26.34	$0.70
Calpine Mankato Energy Center	$26.63	$27.57	-$0.94	$26.35	$27.75	-$1.40
Innvenergy Cannon Falls	$27.57	$27.57	$0.00	$27.69	$27.75	-$0.06
Innvenergy Hampton Corners	$26.78	$27.57	-$0.79	$27.00	$27.75	-$0.75

As can be seen in Table 1, the average LMP prices for the different project locations only differ by a small amount from the LMP prices at the closest NSP loads. The analysis also showed the Red River Valley units had a positive $0.70 basis differential with NSP load during Real Time, meaning there would have been a congestion "credit" as opposed to a "charge."

There are also transmission facilities[4] being planned for the areas where some of the projects are located, and these additional facilities should also result in reduced congestion charges. The Company will perform a full LMP analysis in the course of its evaluation of each project.

With respect to hedging, the Company will continue to hold the ARR Entitlement rights associated with Black Dog Units 3 and 4, and will be able utilize these ARR Entitlements to hedge against congestion associated with its Black Dog Unit 6 proposal. These ARR Entitlement rights cannot be utilized for any of the other proposals.

[3] The Load LMP for the Red River Project is an average of the NSP Minnesota and North Dakota loads - (NSP.NSP + OTP.NSP)/2. The Average Day Ahead Load LMP was $27.57 for Minnesota and $26.64 for North Dakota. The Average Real Time Load LMP was $27.75 for Minnesota and $24.93 for North Dakota.

[4] These transmission facilities include CapX Fargo to Twin Cities 345 kV line, scheduled to be in service in 2015. CapX Twin Cities to Rochester to North Lacrosse 345 kV line, scheduled for late 2015; Minnkota Power Company Center to Grand Forks 345 kV line scheduled to be in service in 2013; MISO MVP Ellendale to Big Stone 345 kV line scheduled for late 2019; MISO MVP Big Stone to Brookings 345 kV line scheduled for late 2017; MISO MVP Brookings to Twin Cities 345 kV line scheduled for 2015 North LaCrosse to North Madison to Dubuque area 345-kV line scheduled for late 2020; and Lakefield Junction to Winnebago to Kossuth County and Obrien Coutny to Kossuth County to Webster 345 kV line scheduled for late 2016.

Preparer:	Randall Oye
Title:	Transmission Access Analyst
Department:	Market Operations
Telephone:	612-330-2886
Date:	July 23, 2013

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☒ **Public Document**

Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 063
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

Does Xcel have the necessary site control for the Black Dog Unit 6 and the two Red River Valley peaking units?

Response:

Yes, the Company has the necessary site control for Black Dog Unit 6 since it will be located at the existing Black Dog plant in Burnsville, Minnesota.. No new land will be required; Unit 6 will be located in the existing powerhouse for Unit 4. Our proposed Unit 6 meets the definition of a large electric power generating plant that requires a site permit. We plan to file the site permit application later this year or early in 2014.

Regarding the two Red River Valley peaking units, we noted in our proposal that we have not yet identified a specific site for those plants. However, having a site in hand is not a prerequisite for proposals in this proceeding. At this stage in the process, utilities often do not have rights to a particular site for a proposed project. This is because final Commission action on the competing proposals may impact the relevant considerations in choosing a site. In this case, site selection for the Red River Valley units depends on input we receive from the North Dakota Public Service Commission in the course of its consideration of our Application for an Advance Determination of Prudence for our proposed CT units, as well as subsequent site permitting of the Red River Valley units.[1]

We have a good track record in securing plant sites and infrastructure rights of way for a project after the Commission makes its determinations. In this case, we have the ability to timely obtain the necessary land rights in the event the Commission selects the Red River Valley CT units to meet our identified need. We have made ample

[1] North Dakota's advance determination of prudence process is similar to Minnesota's certificate of need process. Utilities use the process to determine whether the North Dakota Public Service Commission agrees that a project is prudent and therefore eligible for cost recovery in the utility's rates.

provision for the cost of obtaining the site for these units, and we have a large geographic area in which to select the site.

Preparer: James R. Alders
Title: Strategy Consultant
Department: Regulatory Affairs North
Telephone: 612-330-6732
Date: July 23, 2013

Northern States Power Company
Information Request

Docket No.:	E002/CN 12-1240 (Competitive Acquisition Proposal)		
Request By:	James R. Alders		
Requested From:	Calpine		
Represented By:	Brian Meloy		
Date of Request:	August 7, 2013	Information Request No.	3

Question:

Please provide Calpine's estimate of the interconnection costs for the proposed expansion of the Mankato Energy Center that it expects to be passed through to Xcel Energy to pay, as indicated at page 3 of its Mankato Energy Center expansion proposal, including but not limited to costs relating to interconnection studies, interconnection facilities, network upgrades, and milestone payments.

Response: As indicated in the draft restudy report provided in Calpine's response to Xcel Information Request No. 2, MISO has estimated the cost of necessary upgrades at $650,000 to $1,500,000 with a final cost to be confirmed upon completion of the facilities study.

Preparer:	Brett Kruse
Title:	Vice President for Gov. and Reg. Affairs
Department:	NA
Telephone:	713-830-8732
Date:	August 19, 2013

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Xcel Energy
Docket No.: E002/CN-12-1240
Response To: Department of Commerce Information Request No. 065
Requestor: Christopher Shaw
Date Received: July 9, 2013

Question:

Please list any and all generation resources used to meet Xcel's load serving needs that were developed by Geronimo, Invenergy, or Calpine Corp. Please explain whether the developers complied with any and all agreements with Xcel. If any developer failed to comply, please explain what remedies Xcel pursed in response to any breech and the final resolution.

Response:

Geronimo (Prairie Rose) – NSPM
Geronimo Wind Energy was the developer of the Prairie Rose wind farm in Rock and Pipestone Counties, MN. Northern States Power Company (NSP) negotiated the Prairie Rose Power Purchase Agreement (PPA) with Geronimo in 2011. Geronimo and its business partner Enel Green Power North America, Inc. ("EGP NA") successfully developed the 200 MW wind facility, which achieved commercial operation in December 2012. Geronimo sold the facility to EGP NA and a GE Capital subsidiary in August 2012. To date, including the time period when Geronimo owned the project, NSP has not asserted any claims relating to the owners' compliance with the PPA.

Invenergy (Cannon Falls) – NSPM
A PPA between Invenergy Cannon Falls LLC and NSP was executed on April 1, 2005. In accordance with the PPA, the Cannon Falls simple cycle combustion turbine peaking plant with oil backup was developed with net capability not to exceed 357 MW. Compliance with the terms and conditions of the PPA was a requirement for the facility to become commercial. Commercial operation was achieved on April 11, 2008. Other than the temporary issue described below which was ultimately resolved, to date NSP has not asserted any claims relating to Invenergy's compliance with the PPA.

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[TRADE SECRET BEGINS:

TRADE SECRET ENDS]

Pursuant to Par. 20.14 of the applicable PPA between Invenergy and NSP approved by the MPUC, the above information is confidential and may not be disclosed to any third party to this proceeding. The information has been designated as Trade Secret information pursuant to Minnesota Statute § 13.37, subd. 1(b) as it derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

Calpine (Mankato) – NSPM

A PPA between Mankato Energy Center, LLC (MEC) and NSP was executed on March 11, 2004. In accordance with the PPA, the Mankato combined cycle combustion turbine electric generating facility with fuel oil back-up was developed with a net capability of 357 MW. Compliance with the terms and conditions of the PPA was a requirement for the facility to become commercial. Commercial operation was achieved on January 1, 2006.

[TRADE SECRET BEGINS:

TRADE SECRET ENDS] This information has been designated as Trade Secret information pursuant to Minnesota Statute § 13.37, subd. 1(b) as it derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. Thus, Xcel Energy maintains this information as trade secret.

Invenergy (Spindle Hill) – PSCo

A PPA between Invenergy Spindle Hill Energy LLC and Public Service Company of Colorado (PSCo) was executed on December 22, 2005. In accordance with the PPA,

the natural gas-fueled, two-unit, simple-cycle electric generation facility was developed with a net capability of 314 MW. Commercial operation was achieved on May 14, 2007. To date, NSP has not asserted any claims relating to Invenergy's compliance with the PPA.

Invenergy (Spring Canyon Energy LLC) – PSCo
A PPA between Spring Canyon Energy LLC and PSCo was executed on February 25, 2005. In accordance with the PPA, the wind generation facility was developed with an installed nameplate capacity of 60 MW. Commercial operation was achieved on February 10, 2006. To date, NSP has not asserted any claims relating to Invenergy's compliance with the PPA.

Calpine (Oneta Energy Center) – SPS
On May 7, 2010, Calpine Energy Services, L.P. and Southwestern Public Service Company (SPS) entered into a 7-year capacity and energy purchase agreement with an effective date of January 1, 2012. In accordance with the agreement, Calpine agreed to sell and SPS agreed to purchase 200 MW of capacity and energy from Calpine's existing 1,134 MW Oneta Energy Center located in Coweta, Oklahoma. To date, NSP has not asserted any claims relating to Calpine's compliance with this PPA.

On May 24, 2012, the parties entered into a second agreement with Calpine for the sale and purchase of 200 MW of additional capacity and energy from the Oneta Energy Center. The supply of energy under the second agreement begins on June 1, 2014. To date, NSP has not asserted any claims relating to Calpine's compliance with PPA.

Calpine (Blue Spruce Energy Center) – PSCo
A PPA between Blue Spruce Energy Center, LLC and Public Service Company of Colorado (PSCo) was executed on March 11, 2004. In accordance with the PPA, the natural gas-fueled, two-unit, simple-cycle electric generation facility was developed with a net capability of 310 MW. Commercial operation was achieved on April 10, 2003. Prior to the purchase of the Blue Spruce facility by PSCo on December 6, 2010, we determined that Calpine was in compliance with the PPA.

Calpine (Rocky Mountain Energy Center) – PSCo
A PPA between Rocky Mountain Energy Center, LLC and Public Service Company of Colorado was executed on December 6, 2004. In accordance with the PPA, the natural gas-fueled, combined cycle facility, with duct firing capability, was developed with a primary net capability of 601 MW. Commercial operation was achieved on May 26, 2004. Prior to the purchase of the Rocky Mountain Energy Center by PSCo on December 6, 2010, we determined Calpine was in compliance with the PPA.

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Preparer:	Jeffrey C. Klein
Title:	Manager
Department:	Structured Purchases
Telephone:	303-571-2732
Date:	August 16, 2013

UPDATED: September 23, 2013