



414 Nicollet Mall  
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January 15, 2014

—Via Electronic Filing—

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

RE: SOLAR EFFECTIVE LOAD CARRYING CAPABILITY (ELCC) STUDY  
DOCKET NO. E002/CI-13-315

Dear Dr. Haar:

Northern States Power Company, doing business as Xcel Energy, submits these brief comments in response to the Department of Commerce's November 12, 2013 Reply Comments that proposed a process and schedule in the above-noted docket.

In response to the Department's December 9, 2013 Supplemental Comments, we confirm that the 2011 and 2012 National Solar Radiation Database data is still not available. Therefore, our recommendation, as noted in our October 31, 2013 ELCC study filed in this docket, is to use the 2010 data as the basis of the ELCC study.

Parties had proposed to apply the accredited solar to different capacity values in order to develop a solar Standby Service capacity credit. Table 1 contains a range of credits using the October 31, 2013 ELCC 2010 data.

**Table 1**

			<b>ELCC Study Update - Oct. 31, 2013</b>	
			Fixed Panel <sup>2</sup>	1-Axis
<b>Original<sup>1</sup> Position</b>			2010	2010
			44.6%	57.5%
Solar Rate Reform Group	\$7.13 - \$7.12		\$4.54	\$5.85
Department of Commerce	\$7.44 - \$9.57		\$4.75	\$6.11
Xcel Energy (Gen. Only - Low End)	\$2.14		\$2.23	\$2.87
Xcel Energy (Gen. + Trans.- High End)	\$3.93		\$3.35	\$4.32

<sup>1</sup> Original positions included an estimated ELCC percentage ranges of 70%-80% (SRRG), 70%-90% (DOC) and 42.9% for fixed panel & 52.3% for 1-axis (XCEL)

<sup>2</sup> Average of 180° Az.-10° tilt, 180° - 30° tilt, 180° Az.-45° tilt and 200° Az.-30° tilt

Also, in response to the Department’s request we provide an updated footnote in redline of the following tables from pages 3 and 11, respectively, of our October 31, 2013 study:

**Table 3 – May 2013 Solar Study Results**

	<b>ELCC*</b>	<b>MISO* Accreditation</b>
<b>TMY – Fixed Panel</b>	42.9%	45.4%
<b>TMY – 1-Axis Tracking</b>	48.1%	52.3%
<b>Customer Site 1 – Fixed Panel</b>	-NA-	60.7%
<b>Customer Site 2 – Fixed Panel</b>	-NA-	58.6%
<b>Customer Site 3 – 1-Axis Tracking</b>	-NA-	57.2%

\*Percent of AC nameplate capacity AC capacity value as percentage of AC PV plant capacity

**Table 5 – Updated ELCC Analysis\***

	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Average</b>
Fixed Panel - 180deg Azimuth, 10deg Tilt	31.5%	27.9%	47.1%	<b>35.5%</b>
Fixed Panel - 180deg Azimuth, 30deg Tilt	31.2%	27.9%	43.2%	<b>34.1%</b>
Fixed Panel - 180deg Azimuth, 45deg Tilt	30.3%	26.7%	40.6%	<b>32.5%</b>
Fixed Panel - 200deg Azimuth, 30deg Tilt	31.8%	28.2%	47.6%	<b>35.9%</b>
<b>Fixed Panel Average</b>	<b>31.2%</b>	<b>27.7%</b>	<b>44.6%</b>	<b>34.5%</b>
1 Axis Tracking	38.6%	34.5%	57.5%	<b>43.5%</b>

\*AC accreditation as a percent of AC nameplate AC capacity value as percentage of AC PV plant capacity

Lastly, we are continuing to respond to information requests from the Solar Rate Reform Group regarding the MISO accreditation methodology and the theoretical results of the ELCC model.

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

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

Sincerely,

/s/

AMY LIBERKOWSKI  
MANAGER  
REGULATORY ANALYSIS

c: Service Lists

## CERTIFICATE OF SERVICE

I, SaGonna Thompson, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

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

xx electronic filing

**Docket No. E002/CI-13-315**

Dated this 15th day of January 2014

/s/

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Kevin	Schwain	Kevin.D.Schwain@xcelenergy.com	Xcel Energy	404 Nicollet Mall  Minneapolis, MN 55401	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	Ste 122 9100 W Bloomington Frwy Bloomington, MN 55431	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List
Erin	Shea	bademaileshea@silicon-energy.com	Silicon Energy	11168 Sumter Circle  Bloomington, MN 55438	Paper Service	No	SPL_SL_13-315_Solar Stakeholders List
Doug	Shoemaker	dougs@mnRenewables.org	MRES	2928 5th Avenue South  Minneapolis, MN 55408	Paper Service	No	SPL_SL_13-315_Solar Stakeholders List
Chanti	Sourignavong	chantipal.sourignavong@honeywell.com	Honeywell	1985 Douglas Drive North MN10-111A Golden Valley, MN 55422-3992	Paper Service	No	SPL_SL_13-315_Solar Stakeholders List
Erin	Stojan Ruccolo	ruccolo@fresh-energy.org	Fresh Energy	408 Saint Peter St Ste 220  Saint Paul, MN 55102-1125	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List
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	SPL_SL_13-315_Solar Stakeholders List
Deb	Sundin	deb.sundin@xcelenergy.com	Xcel Energy	414 Nicollet Mall  Minneapolis, MN 55401	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List
SaGonna	Thompson	Regulatory.Records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7  Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List
Lise	Trudeau	lise.trudeau@state.mn.us	Department of Commerce	85 7th Place East Suite 500 Saint Paul, MN 55101	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List
Jason	Willett	jason.willett@metc.state.mn.us	Metropolitan Council	390 Robert St N  Saint Paul, MN 55101-1805	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Daniel	Williams	N/A	Powerfully Green	11451 Oregon Avenue N Champlin, MN 55316	Paper Service	No	SPL_SL_13-315_Solar Stakeholders List
Steven	Wishart	steven.w.wishart@xcelenergy.com	Xcel Energy	7th Floor 414 Nicollet Mall Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_13-315_Solar Stakeholders List