## 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 FOR CERTIFICATES OF NEED FOR THREE 345 kV TRANSMISSION LINE PROJECTS WITH ASSOCIATED SYSTEM CONNECTIONS Docket No. ET2,E002, et al./CN-06-1115

## SURREBUTTAL TESTIMONY AND EXHIBIT OF CHRISTOPHER J. SHAW

## **ON BEHALF**

## OF THE MINNESOTA OFFICE OF ENERGY SECURITY

**JULY 3, 2008** 

1	Q.	Please state your name.
2	A.	My name is Christopher J. Shaw with the Minnesota Office of Energy Security (OES).
3		
4	Q.	Are you the same Christopher J. Shaw who previously filed testimony on behalf of
5		the OES?
6	A.	Yes.
7		
8	Q.	Have you reviewed the Rebuttal Testimony filed on June 16, 2008?
9	A.	I have reviewed the Rebuttal Testimony of Applicant witness Matt Lacey. Mr. Lacey
10		provides an explanation for the discrepancies between Applicants' Response to OES
11		Information Request No. 34 and OES Information Request No. 39 as identified in OES
12		Exhibit No (CJS-7).
13		
14	Q.	Are there changes you wish to make to your calculation of Applicants' supply
15		capacity based on Mr. Lacey's Rebuttal Testimony?
16	A.	Yes, based on Mr. Lacey's Rebuttal Testimony, I have amended my calculation of the
17		supply capacity of Xcel Energy (Xcel).
18		
19	Q.	Please describe the changes you made to your calculation of Xcel's supply capacity.
20	A.	OES Exhibit No (CJS-7) identifies the following units for Xcel that were included in
21		response to OES Information Request No. 34 but not in response to OES Information
22		Request No. 39: Minn AURI, Rapidan Hydro, Lac Courte Orielles Hydro, Neshonoc
23		Hydro, Hastings Hydro, Byllesby Hydro, Eau Galle Hydro, Ford Motor Hydro, St. Cloud

1	Hydro, Minnesota Methane, Landfill Power Flying Cloud, Pine Bend Landfill, Barron
2	Light and Water Department and Hennepin Energy Resource Recovery. Mr. Lacey
3	indicates in his Rebuttal Testimony that:
4 5 6 7 8 9 10	The following units should have also been included in Xcel Energy's supplemental response and listed under "non- utility group": Lac Courte Orielles Hydro, Eau Galle Hydro, Hastings Hydro and Barron Light and Water Department. These units are in addition to the units indentified as "non-utility group" in
11	Applicants' supplemental response to OES Information Request No. 39, which included
12	Byllesby, Hennepin Energy Resource Recovery, Landfill Power Flying Cloud, Pine Bend
13	Landfill, Minnesota Methane, Neshonoc, Rapidan and St. Cloud Hydro. Therefore I have
14	updated my calculation of Applicants' supply capacity to include the capacities as listed
15	in the Applicants' Response to IR 34 for each of the above units. My updated calculation
16	of Applicants' supply capacity is included as OES Exhibit No (CJS-8) attached to
17	this testimony.
18 19 20 21 22 23 24 25	Regarding the Minn AURI unit, Mr. Lacey states that: Minn AURI (biomass generation) is a test facility and was included in response to OES Information Request No. 39 under Minnwind (wind generation) because they are metered together. I compared the capacities of Minnwind as listed in the response to OES Information
26	Request No. 39 and OES Information Request 34. The capacities listed were the same in
27	each response, therefore I have included the 2 MW of capacity for Minn AURI listed in
28	response to OES Information Request No. 34 in my calculation of Xcel's supply
29	capacity. The capacity for Minn AURI is also shown in Exhibit No (CJS-8)
30	attached to this testimony.

1		I note that a revised version of OES Exhibit No (CJS-6) was inadvertently
2		omitted from my June 13, 2008 errata to my Direct Testimony. I have therefore included
3		the above changes and the changes identified in my errata filing in OES Exhibit No.
4		(CJS-8).
5		
6	Q.	How do these changes affect your calculation of Xcel's supply capacity?
7	A.	My calculation of Xcel's supply capacity is now 10,169 MW instead of 10,093 MW.
8		
9	Q.	Were there any other changes you wish to make?
10	A.	No. Mr. Lacey's explanations of the other discrepancies identified in OES Exhibit No.
11		(CJS-7) are reasonable and do not require changes to my calculation.
12		
13	Q.	Do these changes affect your calculation of the total capacity in 2009 of the utility
14		systems used by the Applicants in determining the need for the proposed
15		transmission lines?
16	A.	Yes. As a result of the above changes, my calculation of the total capacity in 2009 of the
17		utility systems used by the Applicants to determine the need for the proposed
18		transmission lines has changed from 23,725 MW to 23,802 MW.

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2009 Capacity

<b>Curry</b>	Resource	MM	5	wing Capacity Adjustment	nt
ЧЪ	Existing Generation Boise Cascade	1442.58 24 24	Nameplate Wind Canacity (MW)	Accredited Capacity*	Wind Adjustment
	Infernational Falls				
			1.021	20.71	80 60 L
	Silver Bay Power	89.25			
	Gordon	6.65			
	Solon Diesel	8.224			
	Sappi Cloquet	85.244			
	Taconite Ridge Addition	25.00			
	Wind Adjustment	(109.08)			
	Participation Purchases	150.00			
	Firm Purchases	0.00			
	Wind Purchases	101.10			
	Other Renewable (Laurentian)	13.79			
	Participation Sales	(1.00)			
	Firm Sales	(175.00)			
	Young 2	224.00			
		Total: 1898.31			
SMMPA	Existing Generation	598.40	8.6	1.16	7.44
	Blooming Prairie Addition	2.00			
	Litchfield Addition	10.00			
	Spring Valley Addition	4.00			
	Bio-1 Addition	2.00			
	Austin SW Retirement	(10.00)			
	Wind Adjustment	(7.44)			
	Participation Purchases	0.00			
	Firm Purchases***	57.00			
	Renewable Purchases	0.00			-
	Participation Sales	0.00			
	Firm Sales	0.00			
		Total: 655.96			-

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Elk River Peaker Addition**** Wind Adjustment Participation Purchases Firm Purchases Firm Purchases Firm Purchases Participation Sales Firm Sales Firm Sales Firm Sales Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Sales Firm Sales Firm Sales Firm Sales Firm Sales Firm Sales Firm Purchases Firm Purchas	Elk River Peaker Addition**** Wind Adjustment Participation Purchases Firm Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales Firm Sales Firm Sales Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Sales Firm Sales Firm Purchases Renewable Purchases Firm Purchases		
Wind Adjustment     (274.03)       Firm Dediction Purchases     210.00       Firm Dediction Purchases     230.00       Firm Dediction Purchases     320.00       Firm Dediction Purchases     330.16       Firm Sales     10.00       Firm Sales     13.34,1       Firm Purchases     330.16       Firm Sales     13.34,1       Firm Purchases     10.00       Firm Purchases     13.34,1       Participation Purchases     10.00       Firm Purchases     17.25       Participation Sales     0.00       Firm Purchases     10.00       Firm Purchases     10.00       Firm Purchases     17.25       Participation Sales     0.00       Firm Purchases     0.00       Firm Sales     10.00       Firm Sales     0.00       Firm Purchases     0.00	Wind Adjustment Participation Purchases Firm Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales Firm Sales Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Sales Firm Purchases Firm Purchases		
Participation Purchases     210.00       Firm Purchases     508.30       Renewable Purchases     5000       Participation Sales     10.00       Participation Sales     10.00       Firm Sales     121.76       Mind Adjustment     121.76       Wind Adjustment     13.34,1       Participation Purchases     500       Firm Sales     17.26       Participation Sales     17.26       Farmolation I Retirement     0.00       Nimolation I Retirement     0.00       Nonchased R Retirement     0.00       Participation Sales     0.00       Firm Sales     0.00       Farmeration     0.00       Firm Sales     0.00	Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales Firm Sales Firm Sales Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Purchases Firm Sales Firm Sales Firm Sales Firm Sales Firm Sales Firm Renewable Purchases Firm Purchases		
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S         Existing Generation         594.60         23.7           Kimballton 1 Retirement         (0.40)         (0.40)         23.7           Moorhead 6 Retirement         (0.50)         (0.50)         23.7           Primghar 5 Retirement         (0.50)         (0.90)         23.7           Primghar 5 Retirement         (0.50)         (0.90)         23.7           Primghar 5 Retirement         (0.50)         (0.90)         23.7           Wind Adjustment         (0.90)         (0.90)         20.00           Participation Purchases         0.00         20.00         20.00           Renewable Purchases         0.00         20.00         20.00           Participation Sales         Total:         58.57         9           Vind Adjustment         (75.13)         86.855         64.65           Firm Sales         Total:         5.46         70.00           Participation Purchases         5.46         70.00         70.00           Firm Purchases         5.46         70.00         70.00           Firm Sales         0.000         70.00         70.00	<ul> <li>S Existing Generation</li> <li>Kimballton 1 Retirement</li> <li>Moorhead 6 Retirement</li> <li>Primghar 4 Retirement</li> <li>Primghar 5 Retirement</li> <li>Prim Sales</li> <li>Firm Sales</li> <li>Firm Sales</li> <li>Firm Purchases</li> <li>Firm Purchases</li> <li>Firm Purchases</li> </ul>	112.17	
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Participation Sales     0.00       Firm Sales     Total:       Existing Generation     0.00       Existing Generation     703.41       Wind Adjustment     703.41       Vind Adjustment     703.41       Participation Purchases     5.46       Firm Purchases     5.46       Renewable Purchases     5.46       Participation Sales     0.00       Firm Sales     0.00	Participation Sales Firm Sales Total: Existing Generation Wind Adjustment Participation Purchases Firm Purchases	20.00	
Firm Sales       0.00         Firm Sales       Total:       585.79         Existing Generation       703.41       86.855         Wind Adjustment       703.41       86.855         Vind Adjustment       75.13)       86.855         Participation Purchases       5.46       86.855         Firm Purchases       5.46       86.855         Renewable Purchases       0.00       0.00         Firm Sales       0.00       100	Firm Sales Existing Generation Wind Adjustment Participation Purchases Firm Purchases Renewable Durchases	0.00	
Total:585.7986.855Existing Generation703.4186.855Wind Adjustment703.4186.855Participation Purchases64.655.46Firm Purchases5.4664.65Renewable Purchases5.460.00Firm Sales0.000.00	Total: Existing Generation Wind Adjustment Participation Purchases Firm Purchases Renewable Durchases	0.00	
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1 1 1 1 1 1 1 1 1 1 1 1		64.65	
		5.46	
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		0.00	
	Total: 745	745.14	

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0.00						8.02																												
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39.28 0.00	.66	0.00	00	(00)	94	30	00	80	00	40	00	50	40	50	00	50	78	78	80	80	796	325	2.198	407	331	096	085	964	.58	2.894	.86	205	838	38)
189.28 0.00	27.66	O.	o.	(100.00)	116.94	1037.30	150.00	Ö	5	17.	20.	ى ك	Ö	10.	20.	с, С	0	õ	ō	ö	14.7	0.03		3.4	20.3	6.0	0. 0.	20.6	<del>~~</del>	2.8	0	80	<u>.</u>	(51.38) 0.00
Existing Generation Participation Purchases	Firm Purchases	Renewable Purchases	Participation Sales	Firm Sales	Total:	Existing Generation	Weston 4 Addition	Seven Mile Creek Landfill Addition	Adams Wind	McNeilus Wind Farm	McNeilus Wind Farm II	Timberline Landfill	Timberline Trail Landfill	Central Disposal Landfill	Wind Farm (Iberdrola)	Sarona Landfill	Bach Farm	Daley Farm	Digester (6)	Digester (7)	Arcadia Electric	Argyle HYD	Argyle 4	Cashton	Cumberland	Elroy	Fennimore	Forest City	La Farge	Lanesboro	Merrilan	New Lisbon	Viota	Wind Adjustment Participation Purchases
RPU						Dairyland																												

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	Firm Purchases Participation Sales		0.00 (171.00)			
	Firm Sales	Total:	(3.60) <b>1141.86</b>			
Xcel	Existing Generation		7303.36	985.00	132.98	852.03
	Highbridge Addition		515.00			
	Grand Meadow Wind Addition		100.00			
	Riverside Addition		508.00			
	Riverside Retirement		(381.25)			
	Wind Adjustment		(852.03)			-
	Participation Purchases		1317.00			·
	Firm Purchases		352.00			
	Renewable Purchases		885.00			
	Participation Sales		(95.00)			
	Firm Sales		0.00		1	
	Invenergy		301.00			
	GRE Purchase		50.00			
	FibroMinn		50.00			
	Chippewa Reserve		3.00			
	Lower Sioux		2.10			
	NGPP		35.00			
	Minn AURI		2.00			
	Rapidian Hydro		4.30			
	Lac Courte Oreilles Hydro		3.10			
	Neshonoc Hydro		0.40			
	Hastings Hydro		2.80			
	Byllesby Hydro		2.60			
	Eau Galle Hydro		0.30			
	St. Cloud Hydro		6.70			
	Minnesota Methane		3.10			
	Landfill Power Flying Cloud		4.70			
	Pine Bend Landfill		12.00			
	Barron Light and Water Department	ot	0.27			<u> </u>
	Hennepine Energy Resources Reco	Recovery	33.70			
		Total:	10169.15			
WPP	Existing Generation		323.80	131.50	17.75	113.75
	Elm Dood Concretion Addition					

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	233.29	87.19	00.0	00.00
	36.41	13.61	0.00	0.00
	269.7	100.8	0	0
(113.75) 702.10 201.32 136.30 (104.00) 0.00 <b>1196.77</b>	2092.70 (233.29) 0.00 406.00 285.45 0.00 0.00 <b>2550.86</b>	618.28 (87.19) 11.00 50.00 99.00 (100.00) 0.00 <b>591.09</b>	101.70 0.00 0.00 0.00 (20.00) <b>81.70</b>	34.40 60.00 7.00 0.00 0.00 0.00
Total:	Total:	Total:	Total:	Total:
Wind Adjustment Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales	Existing Generation Wind Adjustment Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales	Existing Generation Wind Adjustment Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales	Existing Generation Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales	Existing Generation Participation Purchases Firm Purchases Renewable Purchases Participation Sales Firm Sales
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MMPA	Existing Generation		203.00	0	0.00	0.00
	Faribault Energy Addition	on	110.00			
	Participation Purchases	S	80.00			
	Firm Purchases		0.00			
	Renewable Purchases		0.00			
	Participation Sales		0.00			
	Firm Sales		0.00			
		Total:	393.00			
New Ulm	Existing Generation		70.60	0	0.00	0.00
		Total:	70.60			<u>_</u>
		16 Utility Total:	23802.41			- حسن

\*The estimate of Accredited Capacity was determined as 13.5% of Nameplate Capacity. Please see the testimony of OES Witness Ms. Susan Peirce for explanation of the OES's estimate of Accredited Capacity.

\*\*MP's wind purchases, which were provided at 20% of Nameplate Capacity, have been adjusted to show 100% of Nameplate Capacity.

\*\*\*Includes SMMPA's Manitoba Hydro Purchase

\*\*\*The Certificate of Need granted in Docket No. ET-2/CN-07-678 was for 175 MW rather than the 170 MW listed in the Response to IR 39.

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