

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Commission's own motion,
regarding the regulatory review, revisions,
determinations, and/or approvals necessary for the
CITY OF CHARLEVOIX to full comply with
Public Acts 286 and 295 of 2008.

Case No. U-16601

APPLICATION FOR BIENNIAL REVIEW OF RENEWABLE ENERGY PLAN

Pursuant to the Michigan Public Service Commission ("Commission") Order, dated February 22, 2011, in Case No. U-16601, the CITY OF CHARLEVOIX hereby files with the Commission its Application for Biennial Review of its Renewable Energy Plan ("REP"). A copy of that REP, including any and all exhibits, is attached. The City respectfully requests that the Commission review the City's REP for compliance with 2008 PA 295.

Respectfully submitted,

DICKINSON WRIGHT PLLC
Attorneys for the City of Charlevoix

By: _____

Peter H. Ellsworth (P23657)
Michael J. Pattwell (P72419)

Business Address:

215 S. Washington Sq., Ste. 200
Lansing, MI 48933-1816

Telephone: (517) 371-1730

Dated: June 30, 2011

ATTACHMENT

CITY OF CHARLEVOIX

RENEWABLE ENERGY PLAN U-16601

July 1, 2011

- Based on this Renewable Energy Plan (REP) the City of Charlevoix (City) will have the required Renewable Energy Credits (RECs) for the REP time period of 2012-2029 thereby complying with PA 295.
- The primary source of RECs is participation in the Michigan Public Power Agency (MPPA) Granger and North American Natural Resources (NANR) Projects. These projects will utilize landfill gas for electric power generation from a variety of locations in Michigan and possibly in neighboring states. The current schedule calls for additional Granger and NANR project to begin commercial operation between 2011 and 2014.
- The City will have excess RECs to sell during various time periods through out the REP planning period. Selling of RECs represents a source of income to the City which will reduce overall power supply costs. The cost per REC will be determined to a large extent by market forces once the Michigan REC market is designed and implemented. This REP assumes the sale of some of the excess RECs keeping the balance in reserve.
- The City may sell RECs generated in 2009-2011 (carryover RECs) for use in 2012 prior to 2012. This REP does not take into account these advance sales because the Michigan REC market is not yet developed.
- The City will not exceed the renewable energy surcharge caps specified in PA 295.
- The City will comply with Section 45 of PA 295 which refers to methods of notification to customers, charges for costs associated with its REP.

CHARLEVOIX

ATTACHMENT C - RENEWABLE ENERGY PLAN SURCHARGE SUMMARY FOR MUNICIPAL UTILITIES

ITEM		Units	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(a)	Sales Forecast - 3 yr running average	MWH	66,281	65,067	61,442	60,343	60,792	61,073	61,362					
	10% Compliance Factor					0.10	0.10	0.10	0.10					
	RPS Requirement	MWH	-	-	-	6,034	6,079	6,107	6,136	6,136	6,136	6,136	6,136	6,136
	RPS Required REC's	RECS	-	-	-	6,034	6,079	6,107	6,136	6,136	6,136	6,136	6,136	6,136
BASELINE	(-) REC's from Existing Renew. Energy Supply	RECS	-	-	-	-	-	-	-	-	-	-	-	-
	RECS - Incremental Difference	RECS	-	-	-	6,034	6,079	6,107	6,136	6,136	6,136	6,136	6,136	6,136
	FACTOR		-	-	-	0.20	0.33	0.50	1.00	1.00	1.00	1.00	1.00	1.00
	Required New RECS	RECS	-	-	-	1,207	2,006	3,054	6,136	6,136	6,136	6,136	6,136	6,136
	RPS Renewable Energy Credit Compliance													
	Total RPS Required REC's	RECS	-	-	-	1,207	2,006	3,054	6,136	6,136	6,136	6,136	6,136	6,136
	Required New RECs	RECS	-	-	-	1,207	2,006	3,054	6,136	6,136	6,136	6,136	6,136	6,136
*	RECs Obtained from New Resources	RECS	-	416	1,098	2,821	5,878	7,870	8,424	8,283	8,193	8,154	8,142	8,142
	RECs Over / (Short) without carryover	RECS	-	416	1,098	1,614	3,872	4,816	2,288	2,146	2,057	2,018	2,005	2,005
	REC Purchases / (Sales)	RECS	-	-	-	(315)	(315)	(315)	(1,234)	(2,306)	(2,766)	(3,149)	(3,212)	(3,174)
	Cumulative RECs Compliance Balance	RECS	-	416	1,514	2,813	6,370	10,871	11,925	11,765	11,056	9,925	8,718	7,550
	Incremental Compliance with New RECS	%	NA	NA	NA	234%	293%	258%	137%	135%	134%	133%	133%	133%
	Compliance % with Cumulative REC Balance	%	NA	NA	NA	333%	418%	456%	294%	292%	280%	262%	242%	223%
	Revenue Requirements for New Renewables													
*	Build	\$	\$ -	\$ 4,397	\$ 1,268	\$ 14,374	\$ 8,878	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	PPA	\$	\$ -	\$ 30,651	\$ 86,262	\$ 212,667	\$ 446,994	\$ 608,040	\$ 682,071	\$ 711,118	\$ 729,056	\$ 747,501	\$ 766,481	\$ 785,998
	REC Purchases (Sales)	\$	\$ -	\$ -	\$ -	\$ (2,205)	\$ (2,271)	\$ (2,339)	\$ (9,440)	\$ (18,172)	\$ (22,446)	\$ (26,318)	\$ (27,654)	\$ (28,142)
	Total	\$	\$ -	\$ 35,048	\$ 87,531	\$ 224,836	\$ 453,601	\$ 605,700	\$ 672,631	\$ 692,946	\$ 706,610	\$ 721,183	\$ 738,827	\$ 757,856
	New RECs Obtained													
	Generation Based													
*	Build	MWH	-	-	-	-	-	-	-	-	-	-	-	-
	PPA	MWH	-	370	961	2,404	5,000	6,666	7,307	7,435	7,435	7,435	7,435	7,435
	Subtotal	MWH	-	370	961	2,404	5,000	6,666	7,307	7,435	7,435	7,435	7,435	7,435
	Purchase (Sold) From New RECS	RECS	-	-	-	(315)	(315)	(315)	(1,234)	(2,306)	(2,766)	(3,149)	(3,212)	(3,174)
*	Incentive (SB 213 Sec 39 (2))	RECS	-	46	136	417	879	1,204	1,117	847	757	719	706	706
	Total	RECS	-	416	1,098	2,506	5,563	7,555	7,190	5,976	5,427	5,006	4,929	4,968
	Forecasted Transfer Price per MWH - SUGGESTED	\$/MWH	-	37.45	33.46	35.14	37.18	38.69	43.35	66.66	69.70	72.77	75.38	77.90
	Amount recovered through PSCR													
	Transfer price x volume of energy	\$	\$ -	\$ 13,858	\$ 32,174	\$ 84,463	\$ 185,899	\$ 257,922	\$ 316,759	\$ 495,603	\$ 518,255	\$ 541,041	\$ 560,490	\$ 579,233
	Incremental Cost of Compliance	\$	\$ -	\$ 21,190	\$ 55,357	\$ 156,185	\$ 275,608	\$ 347,779	\$ 355,872	\$ 197,343	\$ 188,355	\$ 180,142	\$ 178,338	\$ 178,623
	Non-Volumetric Surcharge													
	Meter (or customer) Forecast (Number)													
	Residential	No.	3,542	3,545	3,548	3,552	3,555	3,559	3,562	3,566	3,570	3,573	3,577	3,580
	Secondary (Commercial)	No.	881	883	884	885	886	887	888	889	890	890	891	892
	Primary (Industrial)	No.	10	10	10	10	10	10	10	10	10	10	10	10
	Total	No.	4,433	4,438	4,443	4,447	4,452	4,456	4,460	4,465	4,469	4,474	4,478	4,483
	Maximum Surcharge (all rate classes at caps)													
	Residential	\$/ MO	\$ 3.00	\$ -	\$ 127,608	\$ 127,736	\$ 127,863	\$ 127,991	\$ 128,119	\$ 128,247	\$ 128,376	\$ 128,504	\$ 128,632	\$ 128,761
	Commercial	\$/ MO	\$ 16.58	\$ -	\$ 175,762	\$ 175,938	\$ 176,114	\$ 176,290	\$ 176,466	\$ 176,642	\$ 176,819	\$ 176,996	\$ 177,173	\$ 177,350
	Industrial	\$/ MO	\$ 187.50	\$ -	\$ 22,839	\$ 22,862	\$ 22,885	\$ 22,908	\$ 22,931	\$ 22,954	\$ 22,977	\$ 23,000	\$ 23,023	\$ 23,046
	Streetlights	\$/ MO	\$ 16.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Unmetered	\$/ MO	\$ 0.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Total	\$/ MO	\$ -	\$ 326,209	\$ 326,535	\$ 326,862	\$ 327,189	\$ 327,516	\$ 327,843	\$ 328,171	\$ 328,499	\$ 328,828	\$ 329,157	\$ 329,486
	Planned Surcharge													
	Residential	\$	\$ 1.83	\$ -	\$ 1,628	\$ 78,205	\$ 78,283	\$ 78,362	\$ 78,440	\$ 78,518	\$ 78,597	\$ 78,675	\$ 78,754	\$ 78,833
	Commercial	\$	\$ 10.14	\$ -	\$ 2,242	\$ 107,716	\$ 107,824	\$ 107,932	\$ 108,040	\$ 108,148	\$ 108,256	\$ 108,364	\$ 108,473	\$ 108,581
	Industrial	\$	\$ 114.68	\$ -	\$ 291	\$ 13,997	\$ 14,011	\$ 14,025	\$ 14,039	\$ 14,053	\$ 14,067	\$ 14,081	\$ 14,095	\$ 14,109
	Streetlights	\$	\$ 10.14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Unmetered	\$	\$ 0.37	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Total	\$	\$ -	\$ -	\$ 4,161	\$ 199,918	\$ 200,118	\$ 200,319	\$ 200,519	\$ 200,719	\$ 200,920	\$ 201,121	\$ 201,322	\$ 201,523

<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136
6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136
-	-	-	-	-	-	-	-	-
6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136
<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>	<u>1.00</u>
6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136

6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136
6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136	6,136
8,142	8,142	8,142	8,142	8,142	8,142	8,142	8,142	8,142
2,005	2,005	2,005	2,005	2,005	2,005	2,005	2,005	2,005
(3,135)	(3,122)	(2,666)	(2,320)	(2,320)	(2,320)	(2,320)	(2,320)	(2,320)
6,420	5,303	4,642	4,327	4,012	3,697	3,382	3,067	2,752
133%	133%	133%	133%	133%	133%	133%	133%	133%
205%	186%	176%	171%	165%	160%	155%	150%	145%

\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 806,091	\$ 826,811	\$ 848,202	\$ 870,218	\$ 892,817	\$ 915,970	\$ 939,706	\$ 964,064	\$ 989,075
\$ (28,635)	\$ (29,374)	\$ (25,833)	\$ (23,158)	\$ (23,852)	\$ (24,568)	\$ (25,305)	\$ (26,064)	\$ (26,846)
\$ 777,456	\$ 797,437	\$ 822,369	\$ 847,061	\$ 868,965	\$ 891,402	\$ 914,401	\$ 937,999	\$ 962,229

-	-	-	-	-	-	-	-	-
7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435
7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435
(3,135)	(3,122)	(2,666)	(2,320)	(2,320)	(2,320)	(2,320)	(2,320)	(2,320)
706	706	706	706	706	706	706	706	706
5,006	5,019	5,475	5,821	5,821	5,821	5,821	5,821	5,821

80.96	84.34	87.43	91.24	95.30	98.29	101.89	105.93	110.32
601,959	627,110	650,078	678,379	708,594	730,840	757,612	787,649	820,287
\$ 175,497	\$ 170,328	\$ 172,291	\$ 168,682	\$ 160,371	\$ 160,562	\$ 156,789	\$ 150,350	\$ 141,941

3,584	3,587	3,591	3,595	3,598	3,602	3,605	3,609	3,613
893	894	895	896	897	898	899	899	900
10	10	10	10	10	10	10	10	10
4,487	4,492	4,496	4,501	4,505	4,510	4,514	4,519	4,523

\$ 129,019	\$ 129,148	\$ 129,277	\$ 129,406	\$ 129,536	\$ 129,665	\$ 129,795	\$ 129,925	\$ 130,054
\$ 177,705	\$ 177,883	\$ 178,061	\$ 178,239	\$ 178,417	\$ 178,595	\$ 178,774	\$ 178,953	\$ 179,132
\$ 23,092	\$ 23,115	\$ 23,138	\$ 23,161	\$ 23,184	\$ 23,207	\$ 23,231	\$ 23,254	\$ 23,277
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 329,815	\$ 330,145	\$ 330,475	\$ 330,806	\$ 331,137	\$ 331,468	\$ 331,799	\$ 332,131	\$ 332,463

\$ 78,912	\$ 78,991	\$ 79,070	\$ 79,149	\$ 79,228	\$ 79,307	\$ 79,386	\$ 79,466	\$ 79,545
\$ 108,690	\$ 108,798	\$ 108,907	\$ 109,016	\$ 109,125	\$ 109,234	\$ 109,343	\$ 109,453	\$ 109,562
\$ 14,124	\$ 14,138	\$ 14,152	\$ 14,166	\$ 14,180	\$ 14,194	\$ 14,209	\$ 14,223	\$ 14,237
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 201,725	\$ 201,927	\$ 202,129	\$ 202,331	\$ 202,533	\$ 202,736	\$ 202,938	\$ 203,141	\$ 203,344

**CHARLEVOIX
GRANGER - ALL SITES**

			2009	2010	2011	2012	2013	2014	2015	2016	2017
CAPACITY FACTOR			0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
NETGENERATION	MWH *		-	370	961	1,634	3,333	4,615	4,871	4,871	4,871
CAPACITY	MW *		-	0.122	0.122	0.293	0.553	0.618	0.618	0.618	0.618
RENEWABLE ENERGY CREDITS											
BASE GENERATION	RECS		-	370	961	1,634	3,333	4,615	4,871	4,871	4,871
ON-PEAK & MICH INCENT RECS	RECS *		-	46	136	267	554	804	719	514	463
TOTAL	RECS		-	416	1,098	1,902	3,887	5,419	5,590	5,385	5,334
GRANGER UNIT COST	\$/ kWh *	\$	-	0.07880	0.08077	0.08279	0.08486	0.08698	0.08916	0.09139	0.09367
O & M	\$/ kWh *	\$	-	-	-	-	-	-	-	-	-
ADMIN	\$/ kWh *	\$	-	0.00082	0.00549	0.00333	0.00163	0.00118	0.00112	0.00112	0.00112
WDS CHARGES	\$/ kWh *	\$	-	0.00002	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000
INCREMENTAL UNIT COST	\$/ REC	\$	-	0.07965	0.08627	0.08612	0.08650	0.08816	0.09028	0.09250	0.09479
TOTAL INCREMENTAL COST	\$	\$	-	29,472	82,945	140,770	288,306	406,883	439,774	450,629	461,756
WITH PILT	\$	\$	1.04	30,651	86,262	146,401	299,838	423,159	457,364	468,654	480,227
INTERCONNECTION COSTS: AMMORTIZED SHARE											
GRANGER SITES											
SITE 1	\$	4.07%	\$ -	\$ -	\$ 1,220	\$ 1,220	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 2	\$	4.07%	\$ -	\$ 1,687	\$ -	\$ 10,163	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 3	\$	4.07%	\$ -	\$ 2,541	\$ -	\$ 2,439	\$ 2,439	\$ -	\$ -	\$ -	\$ -
SITE 4	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ 1,016	\$ -	\$ -	\$ -	\$ -
SITE 5	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ 5,081	\$ -	\$ -	\$ -	\$ -
SITE 6	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 7	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 8	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 9	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$	4.07%	\$ -	\$ 4,228	\$ 1,220	\$ 13,821	\$ 8,537	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ 4,397	\$ 1,268	\$ 14,374	\$ 8,878	\$ -	\$ -	\$ -	\$ -
	\$ / MWH		\$	11.88	1.32	8.79	2.66	-	-	-	-
	\$ / KW-YR		\$	36,053	10,400	49,111	16,059	-	-	-	-
GRANGER ENERGY COST	\$		-	30,651	86,262	146,401	299,838	423,159	457,364	468,654	480,227
GRANGER INTERCONN COST	\$		\$ -	\$ 4,397	\$ 1,268	\$ 14,374	\$ 8,878	\$ -	\$ -	\$ -	\$ -
GRANGER TOTAL COST	\$		\$ -	\$ 35,048	\$ 87,531	\$ 160,775	\$ 308,716	\$ 423,159	\$ 457,364	\$ 468,654	\$ 480,227
GRANGER TOTAL COST	\$ / MWH		\$	94.71	91.04	98.36	92.62	91.69	93.89	96.20	98.58

CHARLEVOIX

North American Renewable Energy - ALL SITES

			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CAPACITY FACTOR			0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
NETGENERATION	MWH	*	-	-	-	769	1,667	2,051	2,436	2,564	2,564	2,564	2,564
CAPACITY	MW	*	-	-	-	0.195	0.228	0.293	0.325	0.325	0.325	0.325	0.325
RENEWABLE ENERGY CREDITS													
BASE GENERATION	RECS		-	0	0	769	1,667	2,051	2,436	2,564	2,564	2,564	2,564
ON-PEAK & MICH INCENT	RECS	*	-	-	-	150	325	400	398	333	295	256	244
TOTAL	RECS		-	0	0	919	1,991	2,451	2,834	2,897	2,859	2,820	2,807
NANR UNIT COST	\$/ kWh	*	\$ -	\$ 0.07800	\$ 0.07995	\$ 0.08195	\$ 0.08400	\$ 0.08574	\$ 0.08775	\$ 0.08994	\$ 0.09230	\$ 0.09474	\$ 0.09727
O & M	\$/ kWh	*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ADMIN	\$/ kWh	*	\$ -	\$ 0.00082	\$ 0.00085	\$ 0.00087	\$ 0.00090	\$ 0.00093	\$ 0.00096	\$ 0.00098	\$ 0.00101	\$ 0.00104	\$ 0.00108
WDS CHARGES	\$/ kWh	*	\$ -	\$ -	\$ -	\$ 0.00002	\$ 0.00001	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000
INCREMENTAL UNIT COST	\$/ REC		\$ -	\$ 0.07882	\$ 0.08080	\$ 0.08284	\$ 0.08490	\$ 0.08667	\$ 0.08871	\$ 0.09093	\$ 0.09332	\$ 0.09579	\$ 0.09834
TOTAL INCREMENTAL COST	\$		\$ -	\$ -	\$ -	\$ 63,718	\$ 141,496	\$ 177,770	\$ 216,064	\$ 233,139	\$ 239,259	\$ 245,588	\$ 252,146
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ 66,266	\$ 147,156	\$ 184,881	\$ 224,707	\$ 242,464	\$ 248,830	\$ 255,412	\$ 262,232
INTERCONNECTION COSTS: AMMORTIZED SHARE													
NANR SITES													
SITE 1	\$	4.07%	\$ -	\$ -	\$ -	\$ 7,602	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 2	\$	4.07%	\$ -	\$ -	\$ -	\$ 7,602	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 3	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ 7,602	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 4	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 5	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 6	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 7	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 8	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 9	\$	4.07%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$	4.07%	\$ -	\$ -	\$ -	\$ 15,203	\$ 7,602	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ 15,811	\$ 7,906	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ / MWH		\$ -	\$ -	\$ -	\$ 20.56	\$ 4.74	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ / KW-YR		\$ -	\$ -	\$ -	\$ 81,033	\$ 34,729	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NANR ENERGY COST	\$		\$ -	\$ -	\$ -	\$ 66,266	\$ 147,156	\$ 184,881	\$ 224,707	\$ 242,464	\$ 248,830	\$ 255,412	\$ 262,232
NANR INTERCONN COST	\$		\$ -	\$ -	\$ -	\$ 15,811	\$ 7,906	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NANR TOTAL COST	\$		\$ -	\$ -	\$ -	\$ 82,078	\$ 155,061	\$ 184,881	\$ 224,707	\$ 242,464	\$ 248,830	\$ 255,412	\$ 262,232
NANR TOTAL COST	\$ / MWH		\$ -	\$ -	\$ -	\$ 106.71	\$ 93.04	\$ 90.14	\$ 92.26	\$ 94.57	\$ 97.05	\$ 99.62	\$ 102.28

CHARLEVOIX

		<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	
Non-Volumetric Surcharge		1.001 Meter Forecast Escalation Factor									
Meter (or customer) Forecast (Number)											
Residential	No.	3,542	3,545	3,548	3,552	3,555	3,559	3,562	3,566	3,570	
Commercial	No.	881	883	884	885	886	887	888	889	890	
Industrial	No.	10	10	10	10	10	10	10	10	10	
Streetlights	No.	-	-	-	-	-	-	-	-	-	
Unmetered	No.	-	-	-	-	-	-	-	-	-	
Total	No.	4,433	4,438	4,443	4,447	4,452	4,456	4,460	4,465	4,469	
Maximum Surcharge (all rate classes at caps)											
Residential	\$ / MO	\$ 3.00	\$ -	\$ 127,608	\$ 127,736	\$ 127,863	\$ 127,991	\$ 128,119	\$ 128,247	\$ 128,376	
Commercial	\$ / MO	\$ 16.58	\$ -	\$ 175,762	\$ 175,938	\$ 176,114	\$ 176,290	\$ 176,466	\$ 176,642	\$ 176,819	
Industrial	\$ / MO	\$ 187.50	\$ -	\$ 22,839	\$ 22,862	\$ 22,885	\$ 22,908	\$ 22,931	\$ 22,954	\$ 22,977	
Streetlights	\$ / MO	\$ 16.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unmetered	\$ / MO	\$ 0.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$ / MO	\$ -	\$ 326,209	\$ 326,535	\$ 326,862	\$ 327,189	\$ 327,516	\$ 327,843	\$ 328,171	\$ 328,499	
TOTAL NPV	\$ NPV		\$ 3,902,467								
TOTAL PAYMENT	\$ NPV		\$ 313,144								
Planned Surcharge											
Residential	\$ / MO	\$ 1.83	\$ -	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	
Commercial	\$ / MO	\$ 10.14	\$ -	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	
Industrial	\$ / MO	\$ 114.68	\$ -	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	
Streetlights	\$ / MO	\$ 10.14	\$ -	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	
Unmetered	\$ / MO	\$ 0.37	\$ -	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	
Total	\$ / MO										
Residential	\$	\$ -	\$ 1,628	\$ 78,205	\$ 78,283	\$ 78,362	\$ 78,440	\$ 78,518	\$ 78,597	\$ 78,675	
Commercial	\$	\$ -	\$ 2,242	\$ 107,716	\$ 107,824	\$ 107,932	\$ 108,040	\$ 108,148	\$ 108,256	\$ 108,364	
Industrial	\$	\$ -	\$ 291	\$ 13,997	\$ 14,011	\$ 14,025	\$ 14,039	\$ 14,053	\$ 14,067	\$ 14,081	
Streetlights	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Unmetered	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total	\$	\$ -	\$ 4,161	\$ 199,918	\$ 200,118	\$ 200,319	\$ 200,519	\$ 200,719	\$ 200,919	\$ 201,119	
LEVELIZED 20 YR INCR COST OF COMPLIANCE	\$ NPV		\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	
OVER / (UNDER) COLLECT	\$		\$ (171,624)	\$ (167,463)	\$ 28,295	\$ 28,494	\$ 28,695	\$ 28,895	\$ 29,095	\$ 29,296	
NPV OF OVER / (UNDER COLLECT)	0		\$ 0								

Surcharge Scaling Factor

61.163%

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
	3,573	3,577	3,580	3,584	3,587	3,591	3,595	3,598	3,602	3,605	3,609	3,613
	890	891	892	893	894	895	896	897	898	899	899	900
	10	10	10	10	10	10	10	10	10	10	10	10
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	<u>4,474</u>	<u>4,478</u>	<u>4,483</u>	<u>4,487</u>	<u>4,492</u>	<u>4,496</u>	<u>4,501</u>	<u>4,505</u>	<u>4,510</u>	<u>4,514</u>	<u>4,519</u>	<u>4,523</u>
\$	128,632	\$ 128,761	\$ 128,890	\$ 129,019	\$ 129,148	\$ 129,277	\$ 129,406	\$ 129,536	\$ 129,665	\$ 129,795	\$ 129,925	\$ 130,054
\$	177,173	\$ 177,350	\$ 177,527	\$ 177,705	\$ 177,883	\$ 178,061	\$ 178,239	\$ 178,417	\$ 178,595	\$ 178,774	\$ 178,953	\$ 179,132
\$	23,023	\$ 23,046	\$ 23,069	\$ 23,092	\$ 23,115	\$ 23,138	\$ 23,161	\$ 23,184	\$ 23,207	\$ 23,231	\$ 23,254	\$ 23,277
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$	<u>328,828</u>	\$ <u>329,157</u>	\$ <u>329,486</u>	\$ <u>329,815</u>	\$ <u>330,145</u>	\$ <u>330,475</u>	\$ <u>330,806</u>	\$ <u>331,137</u>	\$ <u>331,468</u>	\$ <u>331,799</u>	\$ <u>332,131</u>	\$ <u>332,463</u>
\$	1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83	\$ 1.83
\$	10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14
\$	114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68	\$ 114.68
\$	10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14	\$ 10.14
\$	0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37	\$ 0.37
\$	78,675	\$ 78,754	\$ 78,833	\$ 78,912	\$ 78,991	\$ 79,070	\$ 79,149	\$ 79,228	\$ 79,307	\$ 79,386	\$ 79,466	\$ 79,545
\$	108,364	\$ 108,473	\$ 108,581	\$ 108,690	\$ 108,798	\$ 108,907	\$ 109,016	\$ 109,125	\$ 109,234	\$ 109,343	\$ 109,453	\$ 109,562
\$	14,081	\$ 14,095	\$ 14,109	\$ 14,124	\$ 14,138	\$ 14,152	\$ 14,166	\$ 14,180	\$ 14,194	\$ 14,209	\$ 14,223	\$ 14,237
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$	<u>201,121</u>	\$ <u>201,322</u>	\$ <u>201,523</u>	\$ <u>201,725</u>	\$ <u>201,927</u>	\$ <u>202,129</u>	\$ <u>202,331</u>	\$ <u>202,533</u>	\$ <u>202,736</u>	\$ <u>202,938</u>	\$ <u>203,141</u>	\$ <u>203,344</u>
\$	171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624	\$ 171,624
\$	29,497	\$ 29,698	\$ 29,900	\$ 30,101	\$ 30,303	\$ 30,505	\$ 30,707	\$ 30,909	\$ 31,112	\$ 31,314	\$ 31,517	\$ 31,721

MISO Resource Adequacy Capacity	90%
Hours in Year	8760

MPSC Developed Transfer Price Calculation

From Exhibit A-29 (JSR-5) From Exhibit A-30 (JSR-6)

	24 X 7 Average	Annual Capacity Value (\$/MW-yr)	RAC Value (\$/MWh)	Total Transfer Price (\$/MWh)	Five Year TP	Ten Year TP	Eighteen Year TP
2011	\$33.46	\$30.00	\$0.00	\$33.46			
2012	\$35.12	\$168.00	\$0.02	\$35.14			
2013	\$37.08	\$899.00	\$0.09	\$37.17			
2014	\$38.14	\$4,829.00	\$0.50	\$38.64			
2015	\$40.39	\$25,924.00	\$2.66	\$43.05	\$37.49		
2016	\$52.50	\$124,000.00	\$12.74	\$65.24			
2017	\$53.72	\$140,000.00	\$14.38	\$68.10			
2018	\$55.91	\$147,662.00	\$15.17	\$71.08			
2019	\$58.02	\$152,092.00	\$15.63	\$73.65			
2020	\$60.02	\$156,654.00	\$16.09	\$76.11		\$54.16	
2021	\$62.54	\$161,354.00	\$16.58	\$79.12			
2022	\$65.37	\$166,195.00	\$17.07	\$82.44			
2023	\$67.89	\$171,180.00	\$17.59	\$85.48			
2024	\$71.11	\$176,316.00	\$18.11	\$89.22			
2025	\$74.57	\$181,605.00	\$18.66	\$93.23			
2026	\$76.94	\$187,053.00	\$19.22	\$96.16			
2027	\$79.90	\$192,665.00	\$19.79	\$99.69			
2028	\$83.28	\$198,445.00	\$20.39	\$103.67			
2029	\$86.99	\$204,398.00	\$21.00	\$107.99			\$72.56