

**Renewable Energy Plan
Holland Board of Public Works
U-16617**

This filing by the Holland Board of Public Works (HBPW) complies with Public Act 295 of 2008 (the Act) and the related December 4, 2008 Michigan Public Service Commission Order (MPSC Case No. U-15800).

Part 2, Section 25, of the Act requires municipal utilities to file a twenty year plan to achieve renewable energy credit portfolio standards that are specified in Section 27. The plan must be filed with the MPSC within 120 days of the MPSC's temporary order, issued pursuant to Section 191. Each electric providers plan must do the following:

- (b.) Describe how the provider will meet the RPS standards;
- (c.) Specify whether the number of megawatt hours used in the calculation of the RPS requirement will be weather normalized or based on the average number of megawatt hours of electricity sold by the provider annually during the previous 3 years;
- (d.) Provide expected incremental cost of compliance with the RPS requirement;
- (e.) Describe the manner in which the provider will allocate costs.

This document and its attachments satisfy all of the requirements of Section 25 (2) for the twenty year period running from 2009 to 2029.

Background

HBPW had a renewable energy plan prior to the enactment of PA 295. This pre-PA 295 plan provides for all of the Renewable Energy Credits (RECs) required by HBPW for the 2012-2029 time period. Part of this plan called for the collection of a fee from its customers to help pay for the renewable power. Therefore, there are no incremental costs associated with the renewable sources planned for since HBPW is already collecting from its customers and a plan was in place. If RECs were to be required at some point in the future because the pre-PA 295 planned RECs were insufficient to meet requirements, then there would be an incremental cost of RECs for the additional RECs required.

The City will have excess RECs to sell starting in 2012 and continuing for the duration of 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 financial impact of this REP is expected to be minimized for the City's customers and the City will comply with Section 45 of PA 295 which refers to methods of notification to customers charges, if any, for costs associated with its REP.

Section 25 (2) (a) “Describe how the provider will meet the renewable energy standards”

The HBPW developed a two phase approach to meeting the standards. Phase I addresses the compliance years 2012 through 2015 and Phase II addresses the years running from 2016 to 2029.

Phase I – Phase I renewable energy sources include generation derived from a biomass fueled power plant, several landfill gas facilities and one wind project. “Banked” Renewable Energy Credits (REC) from these renewable energy sources for the years 2009-2015 (in accordance with Section 29 (3) (c) of PA 295), when combined with their expected generation during the Phase I years of 2012-2015 provides the HBPW with an inventory of RECs sufficient to allow the HBPW to meet the PA 295 standards through 2015. See *Attachment A – Renewable Energy Facilities* for further details on the specific sites and Holland’s REP spreadsheet for REP details.

Phase II –The HBPW is currently pursuing a wind farm project that has the potential to come on line by the end of 2014. This facility, in combination with the facilities listed on Attachment A, will provide the HBPW the renewable energy generation required on a go forward basis to meet the PA 295 standards. See Attachment B – *Renewable Energy Facilities Under Development* for further details.

Section 25 (2) (b) “Specify whether the number of megawatt hours of electricity used in the calculation of the renewable energy credit portfolio will be weather-normalized or based on the average number of megawatt hours of electricity sold by the electric provider annually during the previous 3 years to retail customers in this state.”

The HBPW will be calculating its renewable energy credit portfolio requirements based on the average number of megawatt hours of electricity sold by the HBPW annually during the previous 3 years to its retail customers in the state.

Section 25 (2) (c) “Include the expected incremental cost of compliance with the renewable energy standards.”

Following the Filing Requirements and Instructions for Renewable Energy Plans for Municipally-Owned Electric Utilities provided in Attachment C of the MPSC Order to implement PA 295, the HBPW has provided Attachment C – Renewable Energy Plan Summary as well as a “RECS” sheet in Holland’s REP spreadsheet providing the accounting of expected RECs. Please see this attachment for further details. In summary, there will be no incremental cost of compliance as Holland’s plan and rate structure to support this plan were in place prior to the passage of PA 295.

Section 25 (2) (d) “Describe the manner in which the provider will allocate costs”

Based on the response above, there are no incremental costs of compliance under this REP.

Attachment A – Renewable Energy Facilities

Grayling Generating Station – Grayling Generation Station Limited Partnership has entered into a contract to provide 1MW of power, around the clock, for the HBPW through 2014. This power will be provided by a biomass fueled power plant located at 4400 Four Mile Road in Grayling, MI. Assuming a 95% capacity factor, this contract will provide HBPW with approximately 8,100 megawatt hours annually.

Granger and North American Natural Resources Landfill Energy – The HBPW, through the Michigan Public Power Agency (MPPA), has entered into a long term contract with Granger and North American Natural Resources (NANR) to provide 16.26% of the power generated at several projects owned by Granger and NANR. Ownership will increase from 488 KW in 2010 to approximately 3.773 MW in 2014.

North American Natural Resources Landfill Energy – The HBPW has entered into a long term contract with NANR to provide energy from a separate landfill gas project. The project began with 3.8 MW in 2010 with a final capacity of approximately 6 MW in 2020. This project will provide approximately 34,000 megawatt hours of energy annually from 2020 through 2029.

Attachment B – Renewable Energy Facilities Under Development

Allegan County Wind Farm – The HBPW has obtained an option to lease approximately 3,500 acres of land in Allegan County, MI. The HBPW installed two meteorological equipment towers (MET) in September, 2010 and they are currently being used to gather data. It is the HBPW's intent to evaluate this data and determine if this site would be viable as a wind farm. If the wind resource is sufficient, the HBPW would proceed with constructing a wind farm consisting of 10-15 wind turbines in the 1.6 MW class, for a total generation potential of 20 MW or 47,000 megawatt hours per year. This project would be directly connected to HBPW's system eliminating the need for an interconnection agreement. Assuming a 30-36 month turbine deliver schedule this asset could be on line and generating power by the end of 2014.

ATTACHMENT C - RENEWABLE ENERGY PLAN SURCHARGE SUMMARY FOR MUNICIPAL UTILITIES

ITEM	Units	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sales Forecast - 3 yr running average	MWH	1,049,993	1,002,188	947,825	935,639	982,118	1,039,853	1,084,539							
10% Compliance Factor					0.10	0.10	0.10	0.10							
RPS Requirement	MWH	-	-	-	93,564	98,212	103,985	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
RPS Required RECs	RECS	-	-	-	93,564	98,212	103,985	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
(-) RECs from Existing Renew. Energy Supply (Baseline)	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RECS - Incremental Difference	RECS	-	-	-	93,564	98,212	103,985	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
FACTOR		-	-	-	0.20	0.33	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Required New RECS	RECS	-	-	-	18,713	32,410	51,993	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
RPS Renewable Energy Credit Compliance															
Total RPS Required RECs	RECS	-	-	-	18,713	32,410	51,993	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
Required New RECs	RECS	-	-	-	18,713	32,410	51,993	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454
RECs Obtained from New Resources	RECS	12,306	41,040	47,140	55,609	69,415	78,958	121,694	122,704	123,921	125,344	126,870	130,024	130,024	130,024
RECs Over / (Short) without carryover	RECS	12,306	41,040	47,140	36,896	37,005	26,965	13,240	14,250	15,467	16,890	18,416	21,570	21,570	21,570
REC Purchases / (Sales)	RECS	-	-	-	(26,233)	(45,778)	(37,535)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)
Cumulative RECs Compliance Balance	RECS	-	41,040	88,180	98,843	90,070	79,500	77,440	76,390	76,557	78,148	81,264	87,534	93,804	100,074
Incremental Compliance with New RECs	%	NA	NA	NA	297%	214%	152%	112%	113%	117%	117%	117%	120%	120%	120%
Compliance % with Cumulative REC Balance	%	NA	NA	NA	628%	378%	253%	171%	170%	171%	172%	175%	181%	186%	192%
Revenue Requirements for New Renewables															
Build	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PPA	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
REC Purchases (Sales)	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New RECs Obtained															
Generation Based															
Build	MWH	12,306	39,375	42,749	44,325	45,902	47,479	87,997	89,574	91,150	92,727	94,304	97,458	97,458	97,458
PPA	MWH	-	1,480	3,846	9,615	19,998	26,665	29,228	29,741	29,741	29,741	29,741	29,741	29,741	29,741
Subtotal	MWH	12,306	40,855	46,595	53,940	65,900	74,144	117,225	119,315	120,891	122,468	124,045	127,199	127,199	127,199
Purchase (Sold) From New RECS	RECS	-	-	-	(26,233)	(45,778)	(37,535)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)	(15,300)
Incentive (SB 213 Sec 39 (2))	RECS	-	185	545	1,670	3,515	4,814	4,468	3,389	3,030	2,876	2,825	2,825	2,825	2,825
Total	RECS	12,306	41,040	47,140	29,376	23,637	41,423	106,394	107,404	108,621	110,044	111,570	114,724	114,724	114,724
Forecasted Transfer Price per MWH - SUGGESTED	\$/MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amount recovered through PSCR															
Transfer price x volume of energy	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Incremental Cost of Compliance	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non-Volumetric Surcharge															
Meter (or customer) Forecast (Number)															
Residential	No.	22,762	22,762	22,762	22,762	22,762	22,762	22,762	23,058	23,358	23,661	23,969	24,281	24,596	24,916
Secondary (Commercial)	No.	4,517	4,517	4,517	4,517	4,517	4,517	4,517	4,576	4,635	4,695	4,757	4,818	4,881	4,944
Primary (Industrial)	No.	159	159	159	159	159	159	159	161	163	165	167	170	172	174
Total	No.	27,438	27,438	27,438	27,438	27,438	27,438	27,438	27,795	28,156	28,522	28,893	29,268	29,649	30,034
Maximum Surcharge (all rate classes at caps)															
Residential	\$/MO	\$ 3.00	\$ 819,432	\$ 819,432	\$ 819,432	\$ 819,432	\$ 819,432	\$ 819,432	\$ 830,085	\$ 840,876	\$ 851,807	\$ 862,881	\$ 874,098	\$ 885,461	\$ 896,972
Commercial	\$/MO	\$ 16.58	\$ 898,702	\$ 898,702	\$ 898,702	\$ 898,702	\$ 898,702	\$ 898,702	\$ 910,385	\$ 922,220	\$ 934,209	\$ 946,354	\$ 958,657	\$ 971,119	\$ 983,744
Industrial	\$/MO	\$ 187.50	\$ 357,750	\$ 357,750	\$ 357,750	\$ 357,750	\$ 357,750	\$ 357,750	\$ 362,401	\$ 367,112	\$ 371,884	\$ 376,719	\$ 381,616	\$ 386,577	\$ 391,603
Streetsights	\$/MO	\$ 16.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unmetered	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$/MO	\$ 2,075,884	\$ 2,075,884	\$ 2,075,884	\$ 2,075,884	\$ 2,075,884	\$ 2,075,884	\$ 2,075,884	\$ 2,102,871	\$ 2,130,208	\$ 2,157,901	\$ 2,185,954	\$ 2,214,371	\$ 2,243,158	\$ 2,272,319
Planned Surcharge															
Residential	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Commercial	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Industrial	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Streetsights	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unmetered	\$/MO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(a) Annual Energy Forecast used to calculate 3-yr Average		1,012,106	916,726	914,642	975,548	1,056,163	1,087,848	1,109,605	1,174,336						
NUMBER OF CUSTOMERS															
Residential		22,762	22,762	22,762	22,762	22,762	22,762	22,762	23,058	23,358	23,661	23,969	24,281	24,596	24,916
Commercial		4,517	4,517	4,517	4,517	4,517	4,517	4,517	4,576	4,635	4,695	4,757	4,818	4,881	4,944
Industrial		159	159	159	159	159	159	159	161	163	165	167	170	172	174
Streetsights		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unmetered		26	26	26	26	26	26	26	26	27	27	27	28	28	28
Total															

<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
108,454	108,454	108,454	108,454	108,454	108,454	108,454
108,454	108,454	108,454	108,454	108,454	108,454	108,454
-	-	-	-	-	-	-
108,454	108,454	108,454	108,454	108,454	108,454	108,454
1.00	1.00	1.00	1.00	1.00	1.00	1.00
108,454	108,454	108,454	108,454	108,454	108,454	108,454
108,454	108,454	108,454	108,454	108,454	108,454	108,454
108,454	108,454	108,454	108,454	108,454	108,454	108,454
130,024	130,024	130,024	130,024	130,024	130,024	130,024
21,570	21,570	21,570	21,570	21,570	21,570	21,570
(25,176)	(36,870)	(36,870)	(36,870)	(36,870)	(36,870)	(36,870)
96,468	81,168	65,868	50,568	35,268	19,968	4,668
120%	120%	120%	120%	120%	120%	120%
189%	175%	161%	147%	133%	118%	104%

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97,458	97,458	97,458	97,458	97,458	97,458	97,458
29,741	29,741	29,741	29,741	29,741	29,741	29,741
127,199	127,199	127,199	127,199	127,199	127,199	127,199
(25,176)	(36,870)	(36,870)	(36,870)	(36,870)	(36,870)	(36,870)
2,825	2,825	2,825	2,825	2,825	2,825	2,825
104,848	93,154	93,154	93,154	93,154	93,154	93,154

-	-	-	-	-	-	-
-	-	-	-	-	-	-
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

25,240	25,568	25,900	26,237	26,578	26,924	27,274
5,009	5,074	5,140	5,207	5,274	5,343	5,412
176	179	181	183	186	188	191
30,425	30,820	31,221	31,627	32,038	32,455	32,876

\$ 908,633	\$ 920,445	\$ 932,411	\$ 944,532	\$ 956,811	\$ 969,250	\$ 981,850
\$ 996,532	\$ 1,009,487	\$ 1,022,611	\$ 1,035,905	\$ 1,049,371	\$ 1,063,013	\$ 1,076,832
\$ 396,694	\$ 401,851	\$ 407,075	\$ 412,367	\$ 417,727	\$ 423,158	\$ 428,659
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\$ 2,301,859	\$ 2,331,783	\$ 2,362,096	\$ 2,392,804	\$ 2,423,910	\$ 2,455,421	\$ 2,487,341

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25,240	25,568	25,900	26,237	26,578	26,924	27,274
5,009	5,074	5,140	5,207	5,274	5,343	5,412
176	179	181	183	186	188	191
-	-	-	-	-	-	-
29	29	30	30	30	31	31

HOLLAND

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	*	-	1,480	3,846	6,538	13,332	18,460	19,486	19,486	19,486
CAPACITY	MW	*	-	0.488	0.488	1.171	2.211	2.472	2.472	2.472	2.472
RENEWABLE ENERGY CREDITS											
BASE GENERATION	RECS		-	1,480	3,846	6,538	13,332	18,460	19,486	19,486	19,486
ON-PEAK & MICH INCENT RECS	RECS	*	-	185	545	1,070	2,215	3,215	2,876	2,056	1,851
TOTAL	RECS		-	1,665	4,391	7,608	15,547	21,675	22,362	21,541	21,336
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	\$		\$ -	\$ 117,890	\$ 331,778	\$ 563,080	\$ 1,153,225	\$ 1,627,533	\$ 1,759,094	\$ 1,802,515	\$ 1,847,025
WITH PILT	\$	1.04	\$ -	\$ 122,605	\$ 345,050	\$ 585,603	\$ 1,199,354	\$ 1,692,635	\$ 1,829,458	\$ 1,874,615	\$ 1,920,906
INTERCONNECTION COSTS: AMMORTIZED SHARE											
GRANGER SITES											
SITE 1	\$	16.26%	\$ -	\$ -	\$ 4,878	\$ 4,878	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 2	\$	16.26%	\$ -	\$ 6,748	\$ -	\$ 40,650	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 3	\$	16.26%	\$ -	\$ 10,163	\$ -	\$ 9,756	\$ 9,756	\$ -	\$ -	\$ -	\$ -
SITE 4	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ 4,065	\$ -	\$ -	\$ -	\$ -
SITE 5	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ 20,325	\$ -	\$ -	\$ -	\$ -
SITE 6	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 7	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 8	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 9	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$	16.26%	\$ -	\$ 16,911	\$ 4,878	\$ 55,285	\$ 34,146	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ 17,587	\$ 5,073	\$ 57,496	\$ 35,512	\$ -	\$ -	\$ -	\$ -
	\$/ MWH		\$ -	\$ 11.88	\$ 1.32	\$ 8.79	\$ 2.66	\$ -	\$ -	\$ -	\$ -
	\$/ KW-YR		\$ -	\$ 36,053	\$ 10,400	\$ 49,111	\$ 16,059	\$ -	\$ -	\$ -	\$ -
GRANGER ENERGY COST	\$		\$ -	\$ 122,605	\$ 345,050	\$ 585,603	\$ 1,199,354	\$ 1,692,635	\$ 1,829,458	\$ 1,874,615	\$ 1,920,906
GRANGER INTERCONN COST	\$		\$ -	\$ 17,587	\$ 5,073	\$ 57,496	\$ 35,512	\$ -	\$ -	\$ -	\$ -
GRANGER TOTAL COST	\$		\$ -	\$ 140,192	\$ 350,123	\$ 643,099	\$ 1,234,866	\$ 1,692,635	\$ 1,829,458	\$ 1,874,615	\$ 1,920,906
GRANGER TOTAL COST	\$/ MWH		\$ -	\$ 94.71	\$ 91.04	\$ 98.36	\$ 92.62	\$ 91.69	\$ 93.89	\$ 96.20	\$ 98.58

HOLLAND

North American Renewable Energy - 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	*	-	-	-	3,077	6,666	8,204	9,743	10,256	10,256
CAPACITY	MW	*	-	-	-	0.780	0.911	1.171	1.301	1.301	1.301
RENEWABLE ENERGY CREDITS											
BASE GENERATION	RECS		-	0	0	3,077	6,666	8,204	9,743	10,256	10,256
ON-PEAK & MICH INCENT	RECS	*	-	-	-	600	1,300	1,600	1,592	1,333	1,179
TOTAL	RECS		-	0	0	3,677	7,966	9,804	11,335	11,589	11,435
NANR UNIT COST											
	\$/kWh	*	\$ -	\$ 0.07800	\$ 0.07995	\$ 0.08195	\$ 0.08400	\$ 0.08574	\$ 0.08775	\$ 0.08994	\$ 0.09230
O & M	\$/kWh	*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ADMIN	\$/kWh	*	\$ -	\$ 0.00082	\$ 0.00085	\$ 0.00087	\$ 0.00090	\$ 0.00093	\$ 0.00096	\$ 0.00098	\$ 0.00101
WDS CHARGES	\$/kWh	*	\$ -	\$ -	\$ -	\$ 0.00002	\$ 0.00001	\$ 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
TOTAL INCREMENTAL COST	\$		\$ -	\$ -	\$ -	\$ 254,871	\$ 565,984	\$ 711,080	\$ 864,256	\$ 932,555	\$ 957,037
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ 265,066	\$ 588,623	\$ 739,524	\$ 898,826	\$ 969,857	\$ 995,318
INTERCONNECTION COSTS: AMMORTIZED											
			SHARE								
NANR SITES											
SITE 1	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 2	\$	16.26%	\$ -	\$ -	\$ -	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041
SITE 3	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 4	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 5	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 6	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 7	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 8	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 9	\$	16.26%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$	16.26%	\$ -	\$ -	\$ -	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162
	\$/ MWH		\$ -	\$ -	\$ -	\$ 1.03	\$ 0.47	\$ 0.39	\$ 0.32	\$ 0.31	\$ 0.31
	\$/ KW-YR		\$ -	\$ -	\$ -	\$ 4,052	\$ 3,473	\$ 2,701	\$ 2,431	\$ 2,431	\$ 2,431
NANR ENERGY COST											
	\$		\$ -	\$ -	\$ -	\$ 265,066	\$ 588,623	\$ 739,524	\$ 898,826	\$ 969,857	\$ 995,318
NANR INTERCONN COST											
	\$		\$ -	\$ -	\$ -	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162
NANR TOTAL COST											
	\$		\$ -	\$ -	\$ -	\$ 268,228	\$ 591,785	\$ 742,686	\$ 901,988	\$ 973,019	\$ 998,481
NANR TOTAL COST											
	\$/ MWH		\$ -	\$ -	\$ -	\$ 87.18	\$ 88.77	\$ 90.52	\$ 92.58	\$ 94.88	\$ 97.36

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256
	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.301	1.300813
	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256	10,256
	1,025	974	974	974	974	974	974	974	974	974	974	974	974
	11,281	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230
\$	0.09474	\$ 0.09727	\$ 0.09988	\$ 0.10259	\$ 0.10542	\$ 0.10837	\$ 0.11143	\$ 0.11458	\$ 0.11780	\$ 0.12111	\$ 0.12451	\$ 0.12801	
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	0.00104	\$ 0.00108	\$ 0.00111	\$ 0.00114	\$ 0.00117	\$ 0.00121	\$ 0.00125	\$ 0.00128	\$ 0.00132	\$ 0.00136	\$ 0.00140	\$ 0.00144	
\$	0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	\$ 0.00000	0.00000
\$	0.09579	\$ 0.09834	\$ 0.10099	\$ 0.10373	\$ 0.10659	\$ 0.10958	\$ 0.11268	\$ 0.11587	\$ 0.11913	\$ 0.12247	\$ 0.12591	\$ 0.12945	
\$	982,353	\$ 1,008,585	\$ 1,035,712	\$ 1,063,856	\$ 1,093,181	\$ 1,123,827	\$ 1,155,589	\$ 1,188,269	\$ 1,221,720	\$ 1,256,028	\$ 1,291,299	\$ 1,327,625	
\$	1,021,647	\$ 1,048,929	\$ 1,077,140	\$ 1,106,410	\$ 1,136,909	\$ 1,168,780	\$ 1,201,813	\$ 1,235,799	\$ 1,270,589	\$ 1,306,269	\$ 1,342,951	\$ 1,380,730	
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	3,041
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	-
\$	3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	\$ 3,041	3,041
\$	3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	3,162
\$	0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	\$ 0.31	0.31
\$	2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	\$ 2,431	2,431
	1,021,647	1,048,929	1,077,140	1,106,410	1,136,909	1,168,780	1,201,813	1,235,799	1,270,589	1,306,269	1,342,951	1,380,730	
\$	3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	\$ 3,162	3,162
\$	1,024,809	\$ 1,052,091	\$ 1,080,303	\$ 1,109,572	\$ 1,140,071	\$ 1,171,942	\$ 1,204,975	\$ 1,238,962	\$ 1,273,751	\$ 1,309,432	\$ 1,346,114	\$ 1,383,892	
\$	99.93	\$ 102.59	\$ 105.34	\$ 108.19	\$ 111.17	\$ 114.27	\$ 117.49	\$ 120.81	\$ 124.20	\$ 127.68	\$ 131.26	\$ 134.94	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
1	HOLLAND																										
2	REQUIRED RECS	RECS	Total	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029			
3																											
4	LOAD - 3 YEAR AVERAGE	***		1,049,993	1,002,188	947,825	935,639	982,118	1,039,853	1,084,539																	
5	FACTOR			-	-	-	0.10	0.10	0.10	0.10																	
6	RECS - REQUIRED		1,922,569				93,564	98,212	103,985	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	
7																											
8	RECS - PRE-REP RECS (BASELINE)			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	RECS - INCREMENTAL DIFFERENCE						93,564	98,212	103,985	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	
10																											
11	FACTOR						0.20	0.33	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
12	RECS - NEW REQUIRED		1,729,923				18,713	32,410	51,993	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	108,454	
13																											
14																											
15	SOURCES			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029			
16																											
17	EXISTING RENEWABLE SOURCES																										
18	ADDITIONS	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	XXX	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	XXX	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	TOTAL	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22																											
23				-	-	-																					
24				-	-	-																					
25																											
26																											
27	NEW RENEWABLES:																										
28	GRANGER (MPPA)	RECS		-	1,665	4,391	7,608	15,547	21,675	22,362	21,541	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	21,336	
29	NANR (MPPA)	RECS		-	-	-	3,677	7,966	9,804	11,335	11,589	11,435	11,281	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	11,230	
30	NANR	RECS		-	32,083	34,690	36,266	37,843	39,420	40,997	42,574	44,150	45,727	47,304	50,458	50,458	50,458	50,458	50,458	50,458	50,458	50,458	50,458	50,458	50,458	50,458	
31	GRAYLING BIOMASS	RECS		12,306	7,292	8,059	8,059	8,059	8,059																		
32	20 MW WINDFARM	RECS								47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	47,000	
33		RECS																									
34		RECS																									
35																											
36	TOTAL NEW RENEWABLES	RECS		12,306	41,040	47,140	55,609	69,415	78,958	121,694	122,704	123,921	125,344	126,870	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	
37	TOTAL OTHER RENEWABLES (without Granger and NANR)			12,306	39,375	42,749	44,325	45,902	47,479	87,997	89,574	91,150	92,727	94,304	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458	97,458	
38	LESS PURCHASES/(SALES) by City			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	TOTAL SOURCES		2,225,241	12,306	41,040	47,140	55,609	69,415	78,958	121,694	122,704	123,921	125,344	126,870	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	130,024	
40																											
41																											
42																											
43																											
44																											
45	USES		TOTAL																								
46	EXISTING SITE - 2009	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	EXISTING SITE - 2010	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	EXISTING SITE - 2011	RECS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
49																											
50	GRANGER SITES - 2010	RECS		1,665			1,665	-																			
51	GRANGER SITES - 2011	RECS		4,391			4,391	-																			
52	GRANGER SITES - 2012	RECS		7,608			7,608	-																			
53	GRANGER SITES - 2013	RECS		15,547				15,547																			
54	GRANGER SITES - 2014	RECS		21,675					21,675																		
55	GRANGER SITES - 2015	RECS		22,362						22,362																	
56	GRANGER SITES - 2016	RECS		21,541							21,541																
57	GRANGER SITES - 2017	RECS		21,336								21,336															
58	GRANGER SITES - 2018	RECS		21,336									21,336														
59	GRANGER SITES - 2019	RECS		21,336										21,336													
60	GRANGER SITES - 2020	RECS		21,336											21,336												
61	GRANGER SITES - 2021	RECS		21,336												21,336											
62	GRANGER SITES - 2022	RECS		21,336													21,336										
63	GRANGER SITES - 2023	RECS		21,336														21,336									
64	GRANGER SITES - 2024	RECS		21,336															21,336								
6																											

