

**MUNICIPAL ELECTRIC PROVIDER  
JOINT FILING  
OF THE  
RENEWABLE ENERGY PLAN  
UNDER PA 295**

**U-15800**

**APRIL 3, 2009**

## **Renewable Energy Plan**

### **Joint Filing of Small Municipals with less than 15,000 Retail Customers**

#### **Background**

On October 6, 2008, Governor Jennifer M. Granholm signed into law the “Clean, Renewable, and Efficient Energy Act,” 2008 PA 295, MCL 460.1001 (PA 295). PA 295 requires certain electric providers, including those municipals in Michigan with their own electric utility systems, to file proposed Renewable Energy Plans (“REP”) with the Commission for its review and approval. In summary, PA 295 requires the Renewable Energy Plan to (1) explain how the electric provider intends to meet the renewable energy targets specified in PA 295, (2) estimate the costs associated with meeting those targets, and (3) propose cost recovery mechanisms to recover costs.

On December 4, 2008, the Michigan Public Service Commission issued a Temporary Order in MPSC Case No. U-15800 (“Temporary Order”) in which it established procedures for energy providers to follow in the preparation, submission, and processing of REPs.

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

#### **Joint Filing**

Section 25 of PA 295 states that two or more municipally owned electric utilities (“Cities”) that serve fewer than 15,000 customers may file jointly. As a result, certain Cities have requested that Michigan Public Power Agency (“MPPA”) prepare their REPs as part of this joint filing. Those Cities participating in this section of the joint filing are:

- City of Charlevoix
- Chelsea Electric Department
- Croswell Light & Power Department
- Dowagiac Department of Public Services
- City of Eaton Rapids
- Escanaba Electric Department
- Grand Haven Board of Light & Power
- Harbor Springs Municipal Utility
- Hart Hydro-Electric
- Lowell Light and Power
- Marquette Board of Light & Power
- Newberry Water & Light Board
- Niles Utility Department
- Village of Paw Paw
- City of Petoskey
- Portland Light and Power Board
- City of St. Louis
- Sebewaing Light & Water Department
- South Haven Department of Public Works
- City of Stephenson
- City of Sturgis
- Traverse City Light & Power
- Wyandotte Municipal Services
- City of Wakefield
- Zeeland Board of Public Works

Also, Section 25 states that the municipally owned electric systems shall file a proposed renewable energy plan within 120 days after the MPSC issues its Temporary Order and this filing meets that requirement.

This report is written to comply with the requirements of PA 295 and is written primarily in an aggregated format. The General Report Section applies to all of the previously listed Cities. When specific information for each city is required, then such information will be provided in a section unique for that city.

## GENERAL REPORT SECTION

Section 25 in PA 295 specifies that the proposed Renewable Energy Plan address the following requirements as listed below.

### **Section 25 (2) (a) Describe how the provider will meet the renewable energy standards**

Each city's basic plan is to:

- Utilize existing generation, when applicable, that qualifies as a renewable source in accordance with PA 295. In most cases this existing generation is hydroelectric generation or wind generation.
- Acquire additional renewable generation as required
- Sell or purchase Renewable Energy Credits ("RECS") as applicable.

Each City has an on-going process where various potential renewable energy sources are reviewed and evaluated. Certain Cities use MPPA for this process while other Cities work independent of MPPA. Potential renewable projects include wind, landfill gas, and biomass sources. In addition, the purchasing and/or selling of qualified RECs are an option that varies on a city-by city basis.

MPPA has a signed Master Agreement with Granger Electric of Michigan LLC ("Granger"), a Michigan based landfill company, to provide renewable energy and RECs from various sites in Michigan and possibly other states that qualify as sites for sources of RECs. These sites will use landfill gas as the fuel for generation. Most cities participating in this joint filing have signed agreements with MPPA to purchase the MWHs and RECs from the Granger projects.

The Granger sites are identified as sites 1 through 7 in the REPs and are classified by Granger as category 1 and 2 sites. Category 1 and 2 sites have very high probabilities of becoming operational and contractual arrangements between Granger and other parties are in the final stages.

Once Granger finalizes its agreements with the various landfill owners and accomplished other critical path tasks associated with each site, then MPPA and Granger will execute a Project Agreement specific to each site. These Project Agreements are the mechanisms that will ultimately lead to landfill gas generation becoming operational.

In addition to the category 1 and 2 sites mentioned above, Granger has identified several other sites, termed category 3 sites, for possible development. Category 3 sites are in earlier stages of development and not included in the City REPs. Consequently, many more renewable MWHs and RECs may be available to MPPA and participating Cities pending outcome of the category 3 sites.

Generation from Granger sites will be base load generation operating seven days per week throughout the year. Therefore, this generation qualifies for “on-peak” generation bonus RECs as defined in Section 39 of PA 295. It is possible that the Granger generation will also qualify for other bonus RECs as defined in Section 39. In particular, the 1/10 REC for using Michigan residents for construction of the renewable energy systems as determined by the MPSC. Also, the 1/10 REC for using equipment made in this state as determined by the MPSC may apply depending on the definition of “equipment made in this state”. However, for the purposes of this filing and in the interest of being conservative, until further definition of bonus RECs is forthcoming and until Granger contracts are finalized no additional RECs are being claimed at this time for Granger generation unless specifically noted in the City’s section of this REP.

In addition, these units are assumed to operate at a 95% capacity factor. This high capacity factor is based on actual capacity factors obtained from their existing landfill generation sites. Granger has a well tuned preventative maintenance program utilizing a trailer mounted temporary generator when taking a unit down for maintenance. This system reduces down time at the site to mere minutes as the existing unit is disconnected and the temporary unit is connected and brought on line.

Some Cities are in the process of developing other sources of renewable energy—most notably wind generation. Those cities pursuing such projects have them listed in the “RECs” part of their REP. Based on discussions with developers and the review of other sources of information, a smoothed yearly cost increase for wind power is estimated at 3% per year. Also, as with the Granger projects, no Michigan labor or equipment bonus RECs are claimed at this time unless specifically noted in the City’s section of this REP.

Certain Cities had qualified renewable generation in operation during the twelve month period preceding the effective date of Order PA 295. These sources are included in the City’s REP as a baseline source listed in the RECs part of the REP. Footnotes provide information regarding these baseline sources.

The selling of excess RECs or purchasing of required RECs is also a part of the individual City REPs. Given the fact that a Michigan REC market is not established, determining the cost of a Michigan REC is problematic. MPPA has had informal discussions with a few different entities regarding the possible price of Michigan RECs. The general consensus is there is a wide range of possible costs depending, in part, on the renewable source providing the RECs. The price range for RECs resulting from these informal discussions is \$15-\$80 per REC. An investor owned utility in Michigan recently estimated the REC price at about \$50 in their REP filing. For purposes of this filing, this report has assumed a \$25 price in 2009 dollars and escalating at 3% per year. Most Cities plan to have excess RECs available for sale so the \$25 price is considered conservative. To the extent that the REC price exceeds the assumed price, the incremental cost to Cities selling RECs will be reduced.

Detailed information on how each City will meet the renewable energy standards can be found in its specific section included in this report.

**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.**

All of the cities utilize the 3-year average method. Years 2009-2012 were taken from each city's total retail sales forecast used as the basis for their Energy Optimization Plan ("EOP") with years 2013-2015 estimated separately. These forecasted values do not include the effects of sales reductions that may occur as part of the EOP since PA 295 does not specifically state to do so. Therefore, if the effects of a City's EOP are included, then required RECs would decrease.

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

The incremental costs of compliance (cost of RECs) are calculated in accordance with Section 47 of PA 295 with details for each City included in their section of this filing. Most of the incremental costs are the result of the Granger projects with upper levels of costs (energy and interconnection) pre-determined in the MPPA/Granger Master Agreement. Since the Granger projects are with MPPA and Cities purchasing the output, estimates for administrative expenses were made by MPPA based on similar expenses for existing MPPA projects. Wholesale Distribution Charges (WDC), if applicable, were estimated based on WDC charges actually paid by cities participating in the MPPA Power Pool Project.

These REPS use the suggested yearly transfer price rates per MWH to calculate the transfer costs that are deducted from each renewable project's total incremental cost calculation. This results in the incremental cost of compliance. Also, the transfer price amounts are allowed for recovery through an electric provider's power supply cost recovery (PSCR).

In general, the transfer price represents an estimate of long term capacity and energy costs avoided

by the renewable energy program and most Cities have chosen to use this suggested transfer price as the starting point for the reduction in the total incremental cost. The primary reason for using the suggested transfer prices is because each City's long term capacity and energy needs vary and calculating unique transfer prices for each City would, to a certain extent, reduce the benefits of a joint filing.

**Section 25 (2) (d) "Describe the manner in which the provider will allocate costs"**

As stated above, the incremental cost is reduced by the costs allocated to the transfer price. This subtraction is done on a year-by-year basis and then the net present value (NPV) of the yearly differences is calculated for the REP planning period. The next step is to levelize this NPV value over a 20-year period and this levelized amount becomes the yearly cost to be recovered through the surcharges from the various customer classes. The split between customer classes are based, in part, on the maximum surcharges provided in PA 295. However, the predominant factor in the determining the planned surcharges for each customer class is the City's knowledge of its customer base which results in a fair and equitable assessment of surcharges.

For all Cities, surcharges collected (if any) are below the specified levels in Section 45 of PA 295. Several Cities in this joint filing have a negative incremental cost of compliance. For those Cities, no surcharges will be assessed.

**Summary**

Based on the above, these REPs take a very conservative approach in the calculation of required RECs. In particular, the decision to not claim at this time the Michigan Labor and Michigan Equipment bonus RECs for most projects demonstrates this conservative approach. Another example is to not include at this time the effects of MWH sales reductions resulting from the EOP. Yet a third example is the decision to not include Granger category 3 projects at this time.

Therefore, as a City's REP and EOP progress over the next several months the required RECs for each City will most likely be less than those presented in their plan.

**DOWAGIAC DEPARTMENT OF PUBLIC SERVICES**

**RENEWABLE ENERGY PLAN**

**U-15858**

**APRIL 3, 2009**

- Based on this Renewable Energy Plan (REP) the Dowagiac Department of Public Services (City) will have the required Renewable Energy Credits (RECs) for the REP time period of 2012-2029 thereby complying with PA 295.
- The source of RECs is the City's wholesale power supplier. The estimated cost per REC was obtained from the wholesale supplier.
- The City will not exceed the renewable energy surcharge caps specified in PA 295 in the event such surcharges are even used.
- The financial impact of this REP to the City's customers will be minimized.
- 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.

**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	2023	2024	2025	2026	2027	2028	2029
<b>Sales Forecast - 3 yr running average</b>	MWH	75,770	71,861	69,371	69,775	70,461	70,908	71,114														
10% Compliance Factor					0.10	0.10	0.10	0.10														
RPS Requirement	MWH	-	-	-	6,977	7,046	7,091	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
RPS Required RECs	RECS	-	-	-	6,977	7,046	7,091	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
(-) RECs from Existing Renew. Energy Supply (pre-RPS)	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>RECS - Incremental Difference</b>	RECS	-	-	-	6,977	7,046	7,091	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
<b>FACTOR</b>		-	-	-	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
<b>Required New RECS</b>	RECS	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
<b>RPS Renewable Energy Credit Compliance</b>																						
Required New RECs	RECS	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
RECs Obtained from New Resources	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RECs Over / (Short) without carryover	RECS	-	-	-	(1,395)	(2,325)	(3,545)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)	(7,111)
REC Purchases / (Sales)	RECS	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
Cumulative RECs Compliance Balance	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Incremental Compliance with New RECs	%	NA	NA	NA	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Compliance % with Cumulative REC Balance	%	NA	NA	NA	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Revenue Requirements for New Renewables</b>																						
Build	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PPA	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
REC Purchases (Sales)	\$	\$ -	\$ -	\$ -	\$ 1,075	\$ 2,930	\$ 6,736	\$ 13,298	\$ 19,983	\$ 20,623	\$ 21,050	\$ 22,401	\$ 26,312	\$ 27,102	\$ 27,915	\$ 28,752	\$ 29,615	\$ 30,503	\$ 31,418	\$ 32,361	\$ 33,332	\$ 34,332
<b>Total</b>	\$	\$ -	\$ -	\$ -	\$ 1,075	\$ 2,930	\$ 6,736	\$ 13,298	\$ 19,983	\$ 20,623	\$ 21,050	\$ 22,401	\$ 26,312	\$ 27,102	\$ 27,915	\$ 28,752	\$ 29,615	\$ 30,503	\$ 31,418	\$ 32,361	\$ 33,332	\$ 34,332
<b>New RECs Obtained</b>																						
Generation Based																						
Build	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PPA	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	MWH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchase (Sold) From New RECS	RECS	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
Incentive (SB 213 Sec 39 (2))	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	RECS	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111
<b>Forecasted Transfer Price per MWH - SUGGESTED</b>	\$/MWH	52	59	62	81	86	92	100	103	105	108	113	117	122	158	134	141	143	148	154	164	171
<b>Amount recovered through PSCR</b>																						
Transfer price x volume of energy	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Incremental Cost of Compliance</b>	\$	\$ -	\$ -	\$ -	\$ 1,075	\$ 2,930	\$ 6,736	\$ 13,298	\$ 19,983	\$ 20,623	\$ 21,050	\$ 22,401	\$ 26,312	\$ 27,102	\$ 27,915	\$ 28,752	\$ 29,615	\$ 30,503	\$ 31,418	\$ 32,361	\$ 33,332	\$ 34,332
<b>Non-Volumetric Surcharge</b>																						
<b>Meter (or customer) Forecast (Number)</b>																						
Residential	No.	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219	2,219
Secondary (Commercial)	No.	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394	394
Primary (Industrial)	No.	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
<b>Total</b>	No.	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125	3,125
<b>Maximum Surcharge (all rate classes at caps)</b>																						
Residential	\$/MO	\$ 3.00	\$ -	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884	\$ 79,884
Commercial	\$/MO	\$ 16.58	\$ -	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390	\$ 78,390
Industrial	\$/MO	\$ 187.50	\$ -	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750	\$ 96,750
Streetslights	\$/MO	\$ 0.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unmetered	\$/MO	\$ 0.60	\$ -	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377	\$ 3,377
<b>Total</b>	\$/MO	\$ -	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401	\$ 258,401
<b>Planned Surcharge</b>																						
Residential	\$	\$ 0.25	\$ -	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657	\$ 6,657
Commercial	\$	\$ 1.00	\$ -	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728	\$ 4,728
Industrial	\$	\$ 8.00	\$ -	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128	\$ 4,128
Streetslights	\$	\$ 0.10	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unmetered	\$	\$ 0.20	\$ -	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126	\$ 1,126
<b>Total</b>	\$	\$ -	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639	\$ 16,639

**DOWAGIAC**

**SOURCE A - ALL SITES**

		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
CAPACITY FACTOR																						
NETGENERATION	MWH *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CAPACITY	MW *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RENEWABLE ENERGY CREDITS																						
BASE GENERATION	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ON-PEAK & MICH INCENT	RECS *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOURCE A UNIT COST																						
O & M	\$ / kWh *	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ADMIN	\$ / kWh *	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WDS CHARGES	\$ / kWh *	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INCREMENTAL UNIT COST	\$ / REC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL INCREMENTAL COST	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
INTERCONNECTION COSTS: AMMORTIZED SHARE																						
SOURCE A SITES																						
SITE 1	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 2	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 3	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 4	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 5	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 6	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SITE 7	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL	\$	0.00%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WITH PILT	\$	1.04	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ / MWH																					
	\$ / KW-YR																					
SOURCE A ENERGY COST																						
SOURCE A ENERGY COST	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOURCE A INTERCONN COST	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SOURCE A TOTAL COST	\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SOURCE A TOTAL COST \$ / MWH																						



	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	
111	SOURCE A - 2026	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
112	SOURCE A - 2026	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
113	SOURCE A - 2027	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
114	SOURCE A - 2028	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
115	SOURCE A - 2029	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
116	TOTAL EXPIRING	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
117																											
118	NEW SOURCE - 2010	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
119	NEW SOURCE - 2011	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
120	NEW SOURCE - 2012	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
121	NEW SOURCE - 2013	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
122	NEW SOURCE - 2014	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
123	NEW SOURCE - 2015	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
124	NEW SOURCE - 2016	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
125	NEW SOURCE - 2017	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
126	NEW SOURCE - 2018	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
127	NEW SOURCE - 2019	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
128	NEW SOURCE - 2020	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
129	NEW SOURCE - 2021	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
130	NEW SOURCE - 2022	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
131	NEW SOURCE - 2023	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
132	NEW SOURCE - 2024	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
133	NEW SOURCE - 2025	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
134	NEW SOURCE - 2026	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
135	NEW SOURCE - 2027	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
136	NEW SOURCE - 2028	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
137	NEW SOURCE - 2029	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
138	TOTAL EXPIRING	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
139																											
140	REC TRACKING																										
141																											
142	EXISTING																										
143	Carryover Start																										
144	New RECs																										
145	Use																										
146	Sell																										
147	Carryover End																										
148																											
149	SOURCE A																										
150	Carryover Start																										
151	New RECs																										
152	Use																										
153	Sell																										
154	Carryover End																										
155																											
156	NEW SOURCE																										
157	Carryover Start																										
158	New RECs																										
159	Use																										
160	Sell																										
161	Carryover End																										
162																											
163	Total Carryover																										
164																											
165	PURCHASE / (SELL) OF RECS				2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029		
166																											
167	REC PRICE - WHOLESALE SUPPLIER	\$ / MWH		\$ 0.04	\$ 0.21	\$ 0.28	\$ 0.77	\$ 1.26	\$ 1.90	\$ 1.87	\$ 2.81	\$ 2.90	\$ 2.96	\$ 3.15	\$ 3.70	\$ 3.81	\$ 3.93	\$ 4.04	\$ 4.16	\$ 4.29	\$ 4.42	\$ 4.55	\$ 4.69	\$ 4.83			
168	REC PRICE - ESCALATOR																1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03		
169																											
170	BUY	RECS					1,395	2,325	3,545	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111	7,111		
171	EXISTING	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
172	TOTAL PURCHASE/(SELL) - 2010	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
173	TOTAL PURCHASE/(SELL) - 2011	RECS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
174	TOTAL PURCHASE/(SELL) - 2012	RECS	1,395	-	-	-	1,395	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
175	TOTAL PURCHASE/(SELL) - 2013	RECS	2,325	-	-	-	-	2,325	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
176	TOTAL PURCHASE/(SELL) - 2014	RECS	3,545	-	-	-	-	-	3,545	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
177	TOTAL PURCHASE/(SELL) - 2015	RECS	7,111	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
178	TOTAL PURCHASE/(SELL) - 2016	RECS	7,111	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
179	TOTAL PURCHASE/(SELL) - 2017	RECS	7,111	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
180	TOTAL PURCHASE/(SELL) - 2018	RECS	7,111	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	
181	TOTAL PURCHASE/(SELL) - 2019	RECS	7,111	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	-	
182	TOTAL PURCHASE/(SELL) - 2020	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	-	
183	TOTAL PURCHASE/(SELL) - 2021	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	-	
184	TOTAL PURCHASE/(SELL) - 2022	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	-	
185	TOTAL PURCHASE/(SELL) - 2023	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	-	
186	TOTAL PURCHASE/(SELL) - 2024	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	-	
187	TOTAL PURCHASE/(SELL) - 2025	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	-	
188	TOTAL PURCHASE/(SELL) - 2026	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	-	
189	TOTAL PURCHASE/(SELL) - 2027	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	-	
190	TOTAL PURCHASE/(SELL) - 2028	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	-	
191	TOTAL PURCHASE/(SELL) - 2029	RECS	7,111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7,111	-	-	
192	TOTAL PURCHASE / (SELL)	RECS	113,938	-	-	-	1,395	2,325	3,545	7,111	7,111	7,111	7,111</														







