

Municipal Electric Provider

Joint Submittal by the Michigan South Central Power Agency

**Renewable Energy Plan Filing
Under PA 342 which amended Act 295**

On Behalf of Its Members; the

Village of Clinton – MPSC Case No. U-17385,

City of Coldwater – MPSC Case No. U-17386,

City of Hillsdale – MPSC Case No. U-17398,

City of Marshall – MPSC Case No. U-17404, and the

Village of Union City – MPSC Case No. U-17418

This joint filing by the Michigan South Central Power Agency (MSCPA) on behalf of its Members, the Village of Clinton, the City of Coldwater, the City of Hillsdale, the City of Marshall, and the Village of Union City, complies with Public Act 342 of 2016, which amends Act 295 of 2008 (the Act), the related December 4, 2008 Michigan Public Service Commission Order (MPSC Case No. U-15800), the related October 4, 2011, December 6, 2012 and March 28, 2017 Michigan Public Service Commission Orders entered in each of the cases associated with this filing (MPSC Case Nos. U-16603, U-16604, U-16616, U-16622, U-16636).

Section 25 (2) 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 171. Each electric provider's plan must do the following:

- a) Describe how the provider will meet the RPS standards;
- 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;
- c) Include the expected incremental cost of compliance with the renewable energy standards;
- d) 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 through 2028.

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

The MSCPA, on behalf of its Members, will meet the renewable energy standards through the use of:

- a) Existing hydro resources for the City of Marshall and the Village of Union City; (*Section 11 (g) (iv) (B) and Section 11 (i) of Acts 342 and 295*)
- b) Existing hydro resources under purchase power agreements with N.E.W. Hydro, LLC; (*Section 11 (g) (iv) (B) and Section 11 (i) of Acts 342 and 295*)
- c) New hydro resources (AMP Hydro 1) currently operating through AMP; (*Section 11, (g) (iv) (B), Section 11 (i) and Section 29 (2) (e) of Act 342*). *This unit was previously qualified under Section 29 (2) (f) of Act 295.*
- d) New hydro resource (AMP Greenup) currently operating through AMP; (*Section 11 (g) (iv) (B), Section 11 (i) and Section 29 (2) (e) of the Act 342*)
- e) New hydro resource (AMP Meldahl) currently operating through AMP; (*Section 11 (g) (iv) (B), Section 11 (i) and Section 29 (2) (e) of the Act 342*)

The above described resources are further described in Attachment A.

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 MSCPA, and each of its Members, will be calculating their renewable energy credit portfolio requirements based on the average number of megawatt hours of electricity sold by each member annually during the previous three years to retail customers in this 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, we have provided *Attachment B – Renewable Energy Plan Surcharge Summary* which details the compliance cost for each MSCPA Member. As shown in each Member’s *Attachment B*, MSCPA Members do not anticipate any additional costs of compliance associated with the renewable energy standards. Production costs for both the current and future hydro are not expected to add to MSCPA’s energy supply costs.

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

Due to the fact that no additional cost of compliance is anticipated, there will be no charges allocated to MSCPA Member customers.

Attachment A – MSCPA Member Renewable Energy Resources

Existing Hydro Resources

Member Resources

City of Marshall – Owns and operates an existing run-of-the-river hydro facility consisting of two units with a combined capacity of 0.319 MW. During the past three years, this facility generated a total of 2,979 megawatt hours, an annual average of 993 megawatt hours, which equates to an average annual capacity factor of 35%.

Village of Union City – Owns and operates an existing run-of-the-river hydro facility consisting of two units with a combined capacity of 0.418 MW. During the past three years, this facility generated a total of 4,057 megawatt hours, an annual average of 1,352 megawatt hours, which equates to an average annual capacity factor of 37%.

Menominee and Oconto Falls

The MSCPA Members have purchased 8.56 MW of two hydro units located at Menominee, Michigan and Oconto Falls, Wisconsin under a twenty-year PPA with N.E.W. Hydro, LLC. These units are currently in operation and MSCPA will begin receiving power on July 1, 2013 from these units. The units have an installed capacity of 8.56 MW.

The allocation of interest in these projects for the participating MSCPA members is as follows:

Member	Capacity (MW)	Expected Annual Energy (MWh)
Village of Clinton	0.56	2,615
City of Coldwater	3.43	16,092
City of Hillsdale	2.18	10,259
City of Marshall	2.06	9,655
Village of Union City	.34	1,609

During the past three years, these facilities generated a total of 121,224 megawatt hours, an annual average of 40,408 megawatt hours, which equates to an average annual capacity factor of 54%.

AMP Hydro 1

Four of the five MSCPA Members have also purchased 13.4 MW of a hydro development project (AMP Hydro 1) through AMP, an Ohio not-for-profit corporation that provides energy related services to, at present, 134 municipal members located in seven states. The original hydro project consists of the development of three hydro generation stations at existing lock and dam facilities located on the Ohio River. These units were originally scheduled to be online in 2012, but with construction delays, the first two units became commercially available during 2016 and the final unit became commercially available late summer of 2017. Collectively, these units are expected to have an installed capacity of 208 MW, with an anticipated annual capacity factor of 55%.

The allocation of interest in this project for the participating MSCPA members is as follows:

Member	Capacity (MW)	Expected Annual Energy (MWh)
Village of Clinton	0.7	3,373
City of Coldwater	6.5	31,299
City of Hillsdale	3.4	16,372
City of Marshall	2.8	13,481

Please note that although the AMP Hydro 1 REC's are qualified for the MIRECS program under Section 29 (2) (f) and Section 11 (g) (iv) (B) of Public Act 295 of 2008 or Section 29 (2) (e) of Public Act 342 of 2016, that all RECS that were generated for 2016 and 2017 were (are being) sold into other markets, therefore those RECS are neither counted nor included on the Attachment B for either 2016 or 2017 of this Biennial Plan.

New Hydro Resources

AMP Greenup

Four of the five MSCPA Members have also purchased 2.1 MW of a second hydro project (AMP Greenup) through AMP, an Ohio not-for-profit corporation. The hydro project consists of two hydro generation stations at existing lock and dam facilities located on the Ohio River. Collectively, these units are expected to have an installed capacity of 70 MW, with an anticipated annual capacity factor of 60%. This hydro project qualified for the renewable energy program, effective April 20, 2017, with the passage of Public Act 342.

The allocation of interest in this project for the participating MSCPA members is as follows:

Member	Capacity (MW)	Expected Annual Energy (MWh)
Village of Clinton	0.1	378
City of Coldwater	1.2	6,131
City of Hillsdale	.4	2,499
City of Marshall	.4	2,030

Please note that although the AMP Greenup REC's are qualified for the MIRECS program under Section 29 (2) (e) and Section 11 (g) (iv) (B) of Public Act 342 of 2016, all RECS that were generated for 2017 were (are being) sold into other markets, therefore those RECS are neither counted nor included on the Attachment B for the year 2017 of this Biennial Plan.

AMP Meldahl

Four of the five MSCPA Members have also purchased 3.2 MW of a second hydro project (AMP Meldahl) through AMP, an Ohio not-for-profit corporation. The hydro project consists of two hydro generation stations at existing lock and dam facilities located on the Ohio River. Collectively, these units are expected to have an installed capacity of 105 MW, with an anticipated annual capacity factor of 60%. This hydro project qualified for the renewable energy program, effective April 20, 2017, with the passage of Public Act 342.

The allocation of interest in this project for the participating MSCPA members is as follows:

Member	Capacity (MW)	Expected Annual Energy (MWh)
Village of Clinton	.1	576
City of Coldwater	1.7	9,342
City of Hillsdale	.7	3,807
City of Marshall	.6	3,093

Please note that although the AMP Meldahl REC's are qualified for the MIRECS program under Section 29 (2) (e) and Section 11 (g) (iv) (B) of Public Act 342 of 2016, all RECS that were generated for 2017 were (are being) sold into other markets, therefore those RECS are neither counted nor included on the Attachment B for the year 2017 of this Biennial Plan.

MUNICIPALLY OWNED ELECTRIC UTILITIES - RENEWABLE ENERGY PLAN SURCHARGE AND COMPLIANCE SUMMARY

Attachment B - Renewable Energy Plan Surcharge Summary

City of Marshall - MPSC Case U-17404

	Units	2009	2010	2011	2012	2013	2014	2015	2016
Annual Retail Sales (Actual/Forecast 2009-2029)	MWH	103,128	107,890	110,018	108,940	101,795	104,937	105,623	107,553
Sales Forecast (3-yr running average)	MWH				107,012	108,950	106,918	105,224	105,224
RPS Renewable Energy Credit Compliance Requirement									
RE Portfolio (Sales Forecast Multiplied by 10% through 2018, 12.5% 2019-2020, and 15% for 2021)	REC				10,701	10,895	10,692	10,522	10,522
Baseline (REC from existing RE Supply (Pre RPS))	REC				1,318	1,318	1,318	1,318	1,318
Additional REC necessary to meet Compliance (RE Portfolio Less Baseline)	REC				9,383	9,577	9,374	9,204	9,204
RPS Requirements Adder (2012: 20%, 2013: 33%, 2014: 50%, 2015: 100%) (ie: 20% of Additional REC necessary)	REC	0%	0%	0%	20%	33%	50%	100%	100%
REC's Required due to RPS Requirements Adder	REC	-	-	-	1,876.64	3,160.41	4,686.90	9,204.40	9,204.40
Compliance Requirement (Sum of RPS Requirements Adder above and Baseline)	REC	-	-	-	3,194.64	4,478.41	6,004.90	10,522.40	10,522.40
REC Inventory									
REC Obtained:									
<u>Generation Based</u>									
Banked from Prior Year	REC		1,843	3,508	5,193	8,591	14,030	17,897	16,819
Future Year REC's (up to 120 days)	REC								
Future Year Incentive REC's (up to 120 days)	REC								
Less: REC's Allocated to Prior Year	REC								-
Less: Incentive REC's Allocated to Prior Year	REC								-
Build/BOT	REC	1,675	1,512	1,531	1,045	1,129	1,178	1,035	804
PPA N.E.W. Hydro, LLC	REC	-	-	-	-	4,379	8,930	9,492	10,672
PPA AMP Hydro 1	REC	-	-	-	-	-	-	-	-
PPA AMP Greenup	REC	-	-	-	-	-	-	-	-
PPA AMP Meldahl	REC	-	-	-	-	-	-	-	-
<i>Subtotal (1)</i>	REC	1,675	3,355	5,039	6,238	14,099	24,138	28,424	28,295
Purchase	REC	-	-	-	6,406	5,262	-	-	-
Incentive (SB 213 Sec 39 (2))	REC	168	153	154	101	503	934	978	1,049
<i>Subtotal (2)</i>	REC	1,843	3,508	5,193	12,745	19,864	25,072	29,402	29,344
Less: Sold	REC	-	-	-	(959)	(1,355)	(1,170)	(2,060)	(1,863)
Less: Retired for Compliance	REC	-	-	-	(3,195)	(4,479)	(6,005)	(10,523)	(10,523)
Less: Expired	REC	-	-	-	-	-	-	-	-
Year-End REC Balance	REC	1,843	3,508	5,193	8,591	14,030	17,897	16,819	16,958
RPS Renewable Energy Credit Compliance Requirement									
Compliance Requirement	REC				3,195	4,479	6,005	10,523	10,523
Retired for Compliance	REC				3,195	4,479	6,005	10,523	10,523
REC Compliance Percentage (Retired for Compliance/Sales Forecast)	%				2.99%	4.11%	5.62%	10.00%	10.00%
Revenue Requirement (Renewable only)									
Build/BOT	\$'s				-	-	-	-	-
PPA	\$'s				-	213,827	429,738	457,217	514,728
REC Purchases (Sales) 2012-16 Actual, Remainder @ \$1.00 Estimated per REC	\$'s				1,528	1,694	(468)	(1,030)	(932)
Total	\$'s				1,528	215,521	429,270	456,187	513,797
\$ Per MWH/ (\$ Per REC if no Build/BOT or PPA for that year)	\$/MWH or				-	11	17	16	18
Forecasted Transfer Price	\$/MWH				133	133	133	133	133
Amount recoved through PSCR (transfer price * volume of energy or REC's)	\$'s				990,983	1,432,410	1,344,364	1,400,091	1,526,308
Incremental Cost of Compliance	\$'s				1,528	1,694	-	-	-

MUNICIPALLY OWNED ELECTRIC UTILITIES - RENEWABLE ENERGY PLAN SURCHARGE AND COMPLIANCE SUMMARY

Attachment B - Renewable Energy Plan Surcharge Summary

City of Marshall - MPSC Case U-17404

	Units	2017	2018	2019	2020	2021	2022	2023
Annual Retail Sales (Actual/Forecast 2009-2029)	MWH	104,595	104,909	105,224	105,540			
Sales Forecast (3-yr running average)	MWH	105,224	105,224	105,686	104,909	105,224		
RPS Renewable Energy Credit Compliance Requirement								
RE Portfolio (Sales Forecast Multiplied by 10% through 2018, 12.5% 2019-2020, and 15% for 2021)	REC	10,522	10,522	13,211	13,114	15,784	15,784	15,784
Baseline (REC from existing RE Supply (Pre RPS))	REC	1,318	1,318	1,318	1,318	1,318	1,318	1,318
Additional REC necessary to meet Compliance (RE Portfolio Less Baseline)	REC	9,204	9,204	11,893	11,796	14,466	14,466	14,466
RPS Requirements Adder (2012: 20%, 2013: 33%, 2014: 50%, 2015: 100%) (ie: 20% of Additional REC necessary)	REC	100%	100%	100%	100%	100%	100%	100%
REC's Required due to RPS Requirements Adder		9,204.40	9,204.40	11,892.75	11,795.63	14,465.60	14,465.60	14,465.60
Compliance Requirement (Sum of RPS Requirements Adder above and Baseline)	REC	10,522.40	10,522.40	13,210.75	13,113.63	15,783.60	15,783.60	15,783.60

REC Inventory

REC Obtained:

Generation Based

Banked from Prior Year	REC	16,958	12,949	-	-	-	-	-
Future Year REC's (up to 120 days)	REC							
Future Year Incentive REC's (up to 120 days)	REC							
Less: REC's Allocated to Prior Year	REC	-	-	-	-	-	-	-
Less: Incentive REC's Allocated to Prior Year	REC	-	-	-	-	-	-	-
Build/BOT	REC	919	1,300	1,300	1,300	1,300	1,300	1,300
PPA N.E.W. Hydro, LLC	REC	10,672	9,655	9,655	9,655	9,655	9,655	9,655
PPA AMP Hydro 1	REC	-	13,481	13,481	13,481	13,481	13,481	13,481
PPA AMP Greenup	REC	-	2,030	2,030	2,030	2,030	2,030	2,030
PPA AMP Meldahl	REC	-	3,093	3,093	3,093	3,093	3,093	3,093
Subtotal (1)	REC	28,549	42,508	29,559	29,559	29,559	29,559	29,559
Purchase	REC	-	-	-	-	-	-	-
Incentive (SB 213 Sec 39 (2))	REC	1,046	2,638	2,638	2,638	2,638	2,638	2,638
Subtotal (2)	REC	29,595	45,146	32,197	32,197	32,197	32,197	32,197
Less: Sold	REC	(6,123)	(34,623)	(18,986)	(19,083)	(16,413)	(16,413)	(16,413)
Less: Retired for Compliance	REC	(10,523)	(10,523)	(13,211)	(13,114)	(15,784)	(15,784)	(15,784)
Less: Expired	REC	-	-	-	-	-	-	-
Year-End REC Balance	REC	12,949	-	-	-	-	-	-

RPS Renewable Energy Credit Compliance Requirement

Compliance Requirement	REC	10,523	10,523	13,211	13,114	15,784	15,784	15,784
Retired for Compliance	REC	10,523	10,523	13,211	13,114	15,784	15,784	15,784
REC Compliance Percentage (Retired for Compliance/Sales Forecast)	%	10.00%	10.00%	12.50%	12.50%	15.00%	15.00%	15.00%

Revenue Requirement (Renewable only)

Build/BOT	\$'s	-	-	-	-	-	-	-
PPA	\$'s	465,031	2,894,247	2,906,427	2,922,667	2,910,487	2,910,487	2,910,487
REC Purchases (Sales) 2012-16 Actual, Remainder @ \$1.00 Estimated per REC	\$'s	(6,123)	(34,623)	(18,986)	(19,083)	(16,413)	(16,413)	(16,413)
Total	\$'s	458,908	2,859,624	2,887,441	2,903,584	2,894,074	2,894,074	2,894,074
\$ Per MWH/ (\$ Per REC if no Build/BOT or PPA for that year)	\$/MWH or	16	63	90	90	90	90	90

Forecasted Transfer Price	\$/MWH	133	133	133	133	133	133	133
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Amount recoved through PSCR (transfer price * volume of energy or REC's)	\$'s	1,541,603	3,931,347	3,931,347	3,931,347	3,931,347	3,931,347	3,931,347
Incremental Cost of Compliance	\$'s	-	-	-	-	-	-	-

MUNICIPALLY OWNED ELECTRIC UTILITIES - RENEWABLE ENERGY PLAN SURCHARGE AND COMPLIANCE SUMMARY

Attachment B - Renewable Energy Plan Surcharge Summary

City of Marshall - MPSC Case U-17404

	Units	2024	2025	2026	2027	2028	2029	Total Plan to Date
Annual Retail Sales (Actual/Forecast 2009-2029)	MWH							
Sales Forecast (3-yr running average)	MWH							
RPS Renewable Energy Credit Compliance Requirement								
RE Portfolio (Sales Forecast Multiplied by 10% through 2018, 12.5% 2019-2020, and 15% for 2021)	REC	15,784	15,784	15,784	15,784	15,784	15,784	
Baseline (REC from existing RE Supply (Pre RPS))	REC	1,318	1,318	1,318	1,318	1,318	1,318	
Additional REC necessary to meet Compliance (RE Portfolio Less Baseline)	REC	14,466	14,466	14,466	14,466	14,466	14,466	
RPS Requirements Adder (2012: 20%, 2013: 33%, 2014: 50%, 2015: 100%) (ie: 20% of Additional REC necessary)	REC	100%	100%	100%	100%	100%	100%	
REC's Required due to RPS Requirements Adder		14,465.60	14,465.60	14,465.60	14,465.60	14,465.60	14,465.60	
Compliance Requirement (Sum of RPS Requirements Adder above and Baseline)	REC	15,783.60	15,783.60	15,783.60	15,783.60	15,783.60	15,783.60	224,144.33
REC Inventory								
REC Obtained:								
<u>Generation Based</u>								
Banked from Prior Year	REC	-	-	-	-	-	-	-
Future Year REC's (up to 120 days)	REC							
Future Year Incentive REC's (up to 120 days)	REC							
Less: REC's Allocated to Prior Year	REC	-	-	-	-	-	-	-
Less: Incentive REC's Allocated to Prior Year	REC	-	-	-	-	-	-	-
Build/BOT	REC	1,300	1,300	1,300	1,300	1,300	1,300	26,428
PPA N.E.W. Hydro, LLC	REC	9,655	9,655	9,655	9,655	9,655	9,655	160,005
PPA AMP Hydro 1	REC	13,481	13,481	13,481	13,481	13,481	13,481	161,772
PPA AMP Greenup	REC	2,030	2,030	2,030	2,030	2,030	2,030	24,360
PPA AMP Meldahl	REC	3,093	3,093	3,093	3,093	3,093	3,093	37,116
<i>Subtotal (1)</i>	REC	29,559	29,559	29,559	29,559	29,559	29,559	409,681
Purchase	REC	-	-	-	-	-	-	11,668
Incentive (SB 213 Sec 39 (2))	REC	2,638	2,638	2,638	2,638	2,638	2,638	36,742
<i>Subtotal (2)</i>	REC	32,197	32,197	32,197	32,197	32,197	32,197	458,091
Less: Sold	REC	(16,413)	(16,413)	(16,413)	(16,413)	(16,413)	(16,413)	(233,939)
Less: Retired for Compliance	REC	(15,784)	(15,784)	(15,784)	(15,784)	(15,784)	(15,784)	(224,152)
Less: Expired	REC	-	-	-	-	-	-	(458,091)
Year-End REC Balance	REC	-	-	-	-	-	-	-
RPS Renewable Energy Credit Compliance Requirement								
Compliance Requirement	REC	15,784	15,784	15,784	15,784	15,784	15,784	
Retired for Compliance	REC	15,784	15,784	15,784	15,784	15,784	15,784	224,152
REC Compliance Percentage (Retired for Compliance/Sales Forecast)	%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	
Revenue Requirement (Renewable only)								
Build/BOT	\$'s	-	-	-	-	-	-	-
PPA	\$'s	2,910,487	2,910,487	2,910,487	2,910,487	2,910,487	2,910,487	36,998,265
REC Purchases (Sales) 2012-16 Actual, Remainder @ \$1.00 Estimated per REC	\$'s	(16,413)	(16,413)	(16,413)	(16,413)	(16,413)	(16,413)	(225,740)
Total	\$'s	2,894,074	2,894,074	2,894,074	2,894,074	2,894,074	2,894,074	36,772,525
\$ Per MWH/ (\$ Per REC if no Build/BOT or PPA for that year)	\$/MWH or	90	90	90	90	90	90	80
Forecasted Transfer Price	\$/MWH	133	133	133	133	133	133	133
Amount recoved through PSCR (transfer price * volume of energy or REC's)	\$'s	3,931,347	3,931,347	3,931,347	3,931,347	3,931,347	3,931,347	55,411,923
Incremental Cost of Compliance	\$'s	-	-	-	-	-	-	3,222