

# **REPORT ON THE IMPLEMENTATION OF P.A. 295 WIND ENERGY RESOURCE ZONES**

**Sally A. Talberg, Chairman  
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**MICHIGAN PUBLIC SERVICE COMMISSION**  
Department of Licensing and Regulatory Affairs  
In compliance with Public PA 295 of 2008

March 6, 2017



## Background

Section 155 of Public Act 295 of 2008 (PA 295 or the Act) requires the Michigan Public Service Commission (Commission or MPSC) to submit an annual report “summarizing the impact of establishing wind energy resource zones, expedited transmission line siting applications, estimates for future wind generation within wind zones, and recommendations for program enhancements or expansion.” The report is to be submitted to the Governor and the Legislature on or before the first Monday of March of each year.

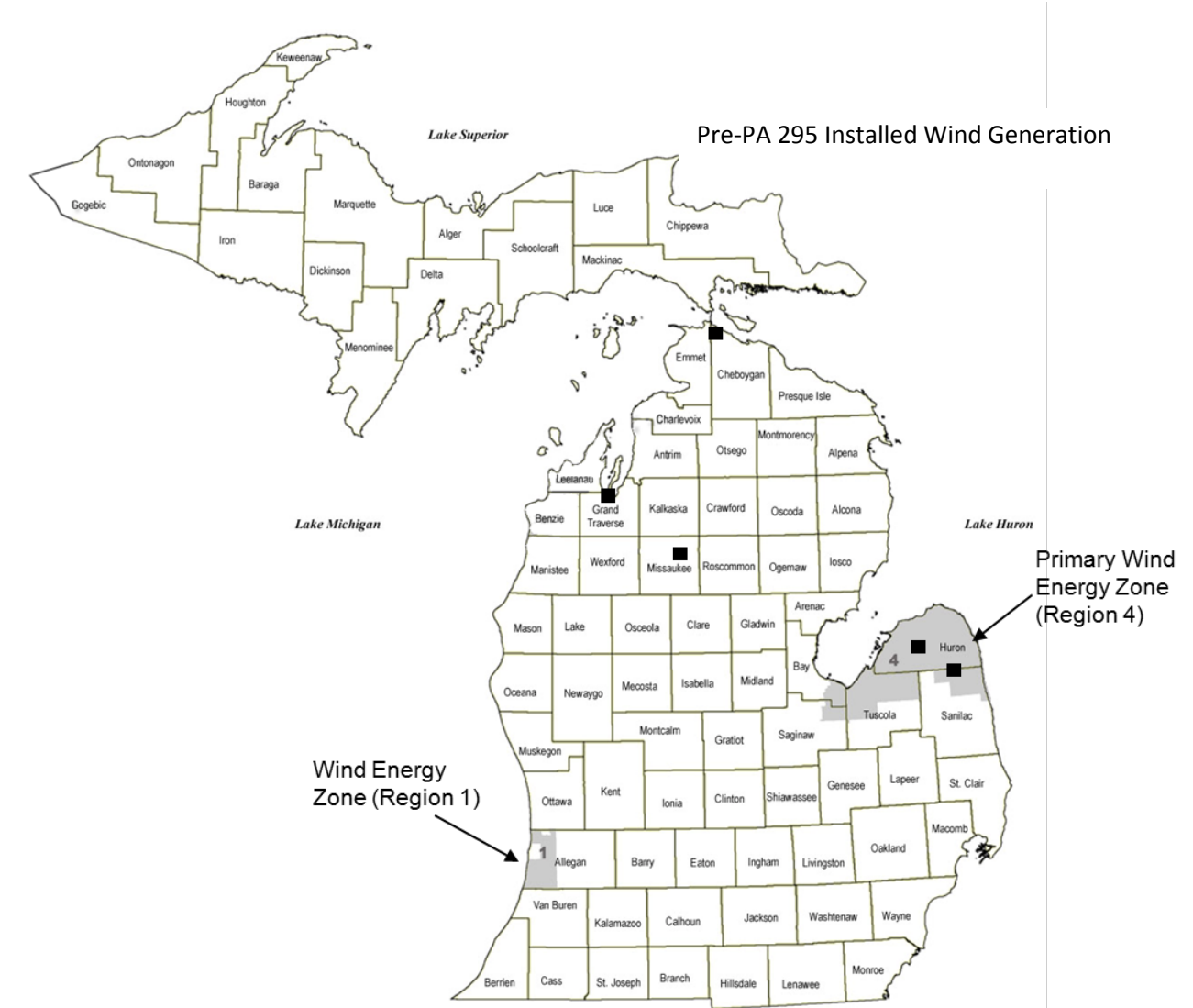
In December 2016, Governor Snyder signed Public Act 342 (PA 342) into law. PA 342 repeals Section 155 and eliminates the provision requiring this annual report. However, the effective date of PA 342 is April 20, 2017 which falls after the due date of this report. This is the sixth and final annual report submitted pursuant to Section 155. For administrative efficiency, the scope of this report is limited to include only the *Estimates for Future Wind Generation within Wind Zones* section as this is the only area with new information.<sup>1</sup>

The wind energy resource zones are shown in **Figure 1**.

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<sup>1</sup> For background on wind zones, see the 2016 Wind Energy Resource Zone Report, [http://www.michigan.gov/documents/mpsc/2016\\_Wind\\_Energy\\_Resource\\_Zone\\_Report\\_516342\\_7.pdf](http://www.michigan.gov/documents/mpsc/2016_Wind_Energy_Resource_Zone_Report_516342_7.pdf)

**Figure 1: Location of Wind Energy Resource Zones**



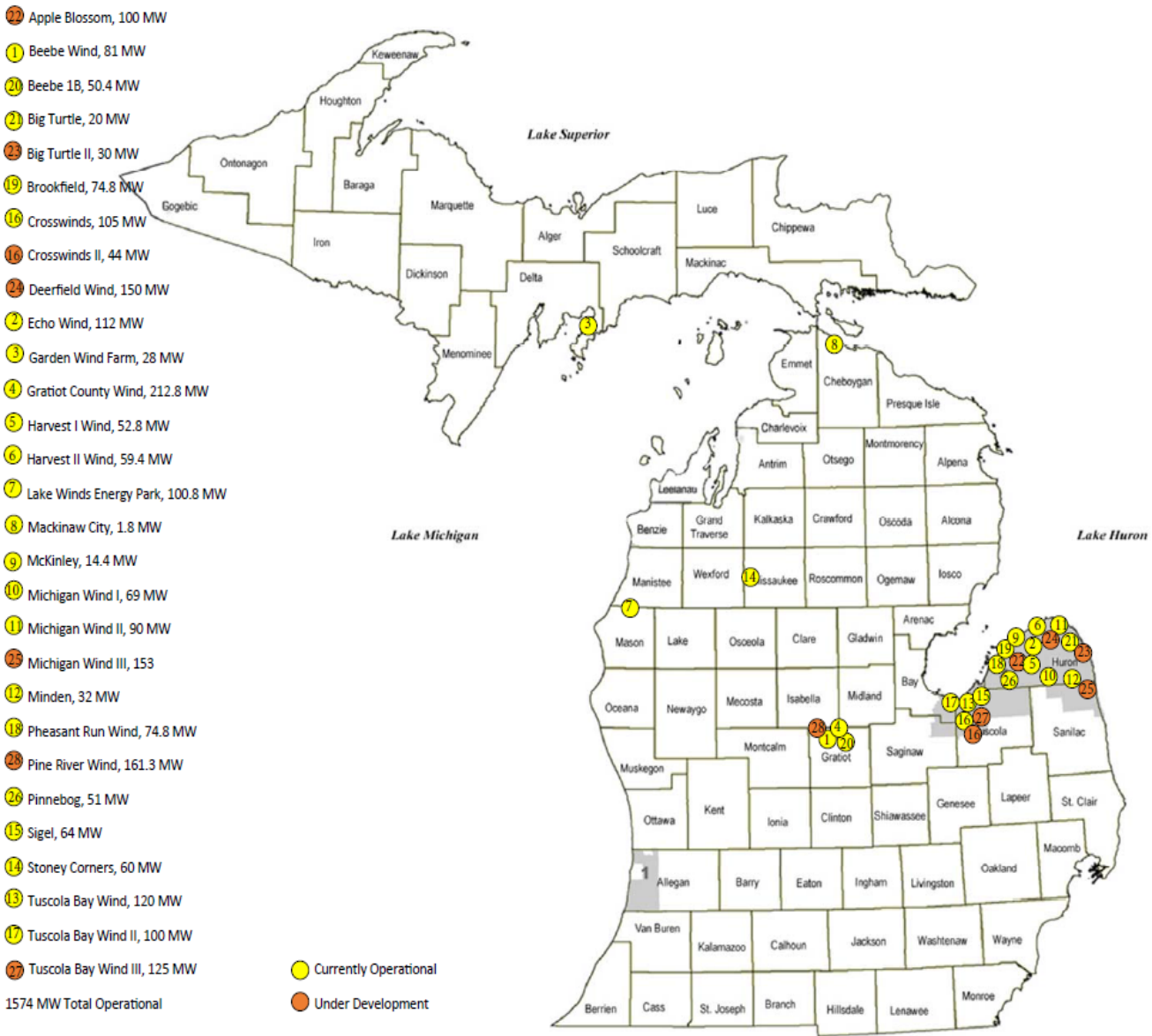
**Estimates for Future Wind Generation within Wind Zones**

In determining the estimate of future wind generation within wind zones, the Commission considered several key factors that may influence wind generation development including the quality of the wind resource and electric provider interest in entering into PA 295 contracts or building projects. In designating wind energy resource zones, the Commission considered and relied on the WERZ Board’s analysis and findings. The WERZ Board identified

the area now designated as the primary wind energy resource zone as the region with the highest wind potential in the state and estimated a minimum wind generation capacity of 2,367 MW and a maximum of 4,236 MW for the primary wind energy resource zone.

Following the enactment of PA 295, wind generation development in Michigan started increasing, both inside and outside of the declared wind energy resource zones. The locations of known wind projects are shown in **Figure 2**.

**Figure 2: Wind Project Locations**



Michigan currently has 1,574 MW of operational wind generation. The 51 MW Pinnebog wind farm became commercially operational in 2016. According to renewable energy plans filed with the Commission and media announcements, 760 MW of new wind generation is

expected by the end of 2018 which will bring Michigan's total wind farm capacity over 2,300 MW. Details about each wind farm are included in *Appendix A*.

Approximately 1,040 MW out of the total 1,574 MW of operational Michigan wind generation are located in the primary wind energy resource zone. Of the additional 760 MW expected to become operational by the end of 2018, 600 MW are located in or adjacent to the primary wind energy resource zone. At the end of 2018, the primary wind energy resource zone is projected to reach 1,640 MW of operational wind generation.

Appendix A Michigan Utility Scale Wind Farms*								
Project Name	County	Capacity (MW)	Turbine Size (MW)	Number of Turbines	Turbine Manufacturer	Developer	Power Purchaser	Commercial Operation Date
Apple Blossom	Huron	100	3.45	29		Geronimo Energy	Consumers Energy	Expected December 2017
Beebe	Gratiot	81	2.4	34	Nordex	<b>Exelon &amp; Great Lakes Wind</b>	Consumers Energy	December 2012
Beebe 1B	Gratiot	50.4	2.4	21	Nordex	Exelon	Municipal Utility	December 2014
Big Turtle	Huron	20	2.0	10	Gamesa	Heritage Sustainable Energy	DTE	December 2014
Big Turtle II	Huron	30	2.0	15	Gamesa	Heritage Sustainable Energy		Unknown
Brookfield	Huron	74.8	1.7	44	GE Energy	NextEra Energy	DTE	February 2014
Cross Winds	Tuscola	105.4	1.7	62	GE Energy	Consumers Energy	N/A	December 2014
CrossWinds II	Tuscola	44	2.3	19	GE Energy	Consumers Energy		Expected December 2017
Deerfield Wind	Huron	150	2	72	Vestas	RES Americas	Wolverine Power Cooperative	Expected 2017
Echo	Huron	112	1.6	70	GE Energy	DTE	N/A	September 2014
Garden I	Delta	28	2.0	14	Gamesa	Heritage Sustainable Energy	Consumers Energy**	September 2012
Gratiot County	Gratiot	212.8	1.6	133	GE Energy	Invenergy & DTE	DTE	June 2012
Harvest	Huron	52.8	1.65	32	Vestas	Exelon	Wolverine Power Cooperative	2008
Harvest II	Huron	59.4	1.8	33	Vestas	Exelon	Consumers Energy	November 2012
Lake Winds	Mason	100.8	1.8	56	Vestas	Consumers Energy	N/A	November 2012
Mackinaw City	Emmet	1.8	0.9	2	NEG Micon	Mackinaw Power	Consumers Energy	2001
McKinley	Huron	14.4	1.6	9	GE Energy	DTE	N/A	December 2012
Michigan Wind I	Huron	69	1.5	46	GE Energy	Exelon	Consumers Energy	2008
Michigan Wind II	Sanilac	90	1.8	50	Vestas	Exelon	Consumers Energy	January 2012
Michigan Wind III	Sanilac	153	2.4	63	Nordex	Exelon	Wolverine Power Cooperative	Expected December 2017
Minden	Sanilac	32	1.6	20	GE Energy	DTE	N/A	December 2012
Pheasant Run Wind	Huron	74.8	1.7	44	GE Energy	NextEra Energy	DTE	December 2013
Pine River Wind	Gratiot, Isabella	161.3		65		Pine River Wind Energy, LLC	DTE	Expected December 2018
Pinnebog	Huron	51	1.7	30	GE Energy	DTE	DTE	December 2016
Sigel	Huron	64	1.6	40	GE Energy	DTE	N/A	December 2012
Stoney Corners	Missaukee & Osceola	60	2 - 2.5	29	Repower, Fuhrlander, Northern Power Systems	Heritage Sustainable Energy	Consumers Energy, DTE, Traverse City Light & Power	2008 - October 2012
Tuscola Bay Wind	Tuscola, Bay & Saginaw	120	1.6	75	GE Energy	NextEra Energy	DTE	December 2012
Tuscola Wind II	Tuscola & Bay	100.3	1.7	59	GE Energy	NextEra Energy	DTE Electric	November 2013
Tuscola Wind III	Tuscola	125		58		NextEra Energy		Unknown
<b>Totals</b>		<b>2,338.0</b>	<b>MW</b>	<b>1,234</b>	<b>Turbines</b>			
<b>Operational Totals</b>		<b>1,574.7</b>	<b>MW</b>	<b>883</b>	<b>Turbines</b>			
Bold text indicates the wind farm is operational.								
**Heritage may supply power and RECs from this wind farm to DTE under an "additional supply" provision in a separate contract.								
* Prepared by MPSC Staff and includes all wind farms operational, planned or under contract with an MPSC-rate-regulated electric provider. Additional wind farms are included as MPSC Staff becomes aware of the project.								