

# Distributed Generation and Legacy Net Metering Programs Report

For Calendar Year 2018

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This document is an annual report prepared by Staff from the Michigan Public Service Commission's Energy Resources Division, Renewable Energy Section. The main data source is annual reports filed by Michigan electric providers. Staff thanks the electric providers for their efforts to provide the data used in preparing this report.

To stay informed about renewable energy activities happening in Michigan, readers are invited to visit the Commission's Renewable Energy website, at <u>http://www.michigan.gov/renewables</u>.

### **Executive Summary**

The distributed generation and legacy net metering programs enable Michigan's utility and alternative electric supplier customers to install on-site renewable energy electric generation projects to meet some or all of their electric energy needs and reduce their electric bills. The project size is limited such that the annual generation does not exceed the customer's electricity consumption for the previous 12 months. The customer reduces electricity purchases from the utility by using their generated electricity "behind the meter" and receives a credit for excess generation.

This report is based on electric provider annual reports for calendar year 2018 and Michigan Public Service Commission (Commission) activities through November 2019.

Customer participation in the legacy net metering program increased from 3,277 customers and 3,427<sup>1</sup> installations in 2017 to 5,219 customers and 5,379 installations in calendar year 2018.<sup>2</sup> At the end of 2018, the total capacity of legacy net metering program installations was approximately 43,481 kilowatts (kW), an increase of 13,910 kW and 47% over the previous calendar year. As shown below, program participation has increased each year from 2006 through 2018.



#### Michigan Legacy Net Metering Program Customers

<sup>1</sup> The number of installations exceeds the number of customers due to some customers having multiple installations.

<sup>2</sup> A complete list of Projects by utility, ZIP code, type and size is provided at the MPSC's website <u>www.michigan.gov/documents/mpsc/2018 Legacy Net Metering Data 672131 7.pdf</u>

Public Acts 341 and 342 of 2016 require the Commission to phase out the net metering program and create a new distributed generation program. During 2018 and 2019, the Commission continued to implement the new distributed generation program. The Commission issued an order on July 12, 2017 finding that the net metering program shall continue as the distributed generation program (legacy net metering program) until the new distributed generation program tariffs are approved as part of a utility's rate case.<sup>3</sup> The existing net metering program is now referred to as the legacy net metering program. Legacy net metering program during this interim period may continue to be served under the legacy net metering program for 10 years from the date of their initial enrollment.

During the time period of data collection for this report, no utility had a distributed generation program tariff in place. The data discussed in this report reflects only the legacy net metering program which is the net metering program previously enacted in Public Act 295 of 2008.

<sup>&</sup>lt;sup>3</sup> https://www.michigan.gov/documents/mpsc/u-18383 7-12-17 579158 7.pdf

The Report on the MPSC Staff Study to Develop a Cost of Service-Based Distributed Generation Program Tariff was issued on February 21, 2018.<sup>4</sup> The study recommended a conceptual tariff based on a new approach called the inflow/outflow billing mechanism. The Commission issued an order on April 18, 2018 directing all utilities to include the proposed inflow/outflow tariff in any rate case filed after June 1, 2018.<sup>5</sup> A utility may also file an alternate tariff proposal of its own design. The new distributed generation program tariff will go into effect, as directed by the Commission, at the conclusion of each utility's rate case filed after June 1, 2018.

DTE Electric and Upper Peninsula Power Company were the first utilities to file rate cases including the distributed generation program tariff. Rate cases are required, by law, to conclude within 10 months of the filing date. DTE Electric's rate case was filed on July 6, 2018 and an order was issued on May 2, 2019 approving a new tariff.<sup>6</sup> UPPCO's rate case was filed on September 21, 2018 and an order approving a settlement including a new tariff was issued on May 23, 2019.<sup>7</sup> Prior to the order approving the settlement, UPPCO's program was closed due to enrollments reaching the statutorily required minimum participation level. UPPCO agreed to double the size of its program in the settlement. Indiana Michigan Power Company has a pending rate case which includes a distributed generation program tariff.<sup>8</sup>

<sup>&</sup>lt;sup>4</sup> <u>https://www.michigan.gov/documents/mpsc/MPSC\_Staff\_DG\_Report\_with\_Appendices\_614779\_7.pdf</u>

<sup>&</sup>lt;sup>5</sup> https://www.michigan.gov/documents/mpsc/U-18383 4-18-18 620947 7.pdf

<sup>&</sup>lt;sup>6</sup> MPSC Case No. U-20162: <u>https://mi-psc.force.com/s/global-search/20162</u>

<sup>&</sup>lt;sup>7</sup> MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

<sup>&</sup>lt;sup>8</sup> MPSC Case No. U-20359: <u>https://mi-psc.force.com/s/global-search/20359</u>

### Introduction

The Michigan Public Service Commission (Commission) Staff (MPSC Staff) annually issues a distributed generation program report summarizing the information filed by electric providers pursuant to Rule 40 (3) of the Commission's Electric Interconnection and Net Metering Standards. This report is based on electric provider annual reports for calendar year 2018 and Commission activities through November 2019.

The distributed generation and legacy net metering programs enable Michigan's utility and alternative electric supplier customers to install on-site renewable energy electric generation projects to meet some or all of their electric energy needs and reduce their electric bills. During the time period of data collection for this report, no utility had a tariff in place to implement the new distributed generation program. The data discussed in this report reflects only the legacy net metering program which is the net metering program previously enacted in Public Act 295 of 2008.

The project size is limited such that the annual generation does not exceed the customer's electricity consumption for the previous 12 months. The customer reduces electricity purchases from the utility by using their generated electricity "behind the meter" and receives a credit for excess generation.

Legacy net metering projects are grouped into three size categories with differing billing, metering and interconnection requirements.

### Category 1: Legacy net metering for projects 20 kW and under (certified equipment) – Net Metering

For customers of utilities where the new distributed generation program tariff is not yet in effect, category 1 legacy net metering is available to any customer meeting the generator size requirements (20 kW and under) and using an Underwriters Laboratory (UL) 1741 certified inverter. Typically, residential customers would fit within this size category.

### Program features:

- Billing based on net usage.
- A credit for the full retail rate for all excess kWh.
- Use of the customer's existing meter if it is capable of measuring and recording the flow of energy in both directions.
- A generator meter available at cost, if requested by the customer. (The generator meter is for the customer's benefit. Utilities are not obligated to read a customer's generator meter.)
- Use of an inverter certified by a nationally recognized testing laboratory to IEEE 1547 testing standards and in compliance with UL 1741. The inverter manufacturer will be able to produce proof of this certification.
- A maximum program and interconnection application processing fee of \$100. Customers pay all interconnection costs.

• Credits for excess generation carry forward indefinitely.

### Category 2: Legacy net metering for projects over 20 kW up to 150 kW – Modified Net Metering

For customers of utilities where the new distributed generation program tariff is not yet in effect, category 2 legacy net metering is available to any customer meeting the generator size requirements. Typically, these customers would be commercial, industrial, or institutional customers.

### Program features:

- Customers pay the full retail rate for electricity deliveries from their electric provider and receive the generation portion of the retail rate or a wholesale rate for deliveries of excess generation to the grid.
- No charge for the engineering review for interconnection.
- Customers pay all interconnection costs (combined \$100 interconnection and program application fee), distribution study fees and any required distribution system upgrade costs.
- Customers are not subject to standby charges.

### Category 3: Limited to Methane Digesters over 150 kW up to 550 kW - Modified Net Metering

• Same as category 2, except that customers are subject to standby charges.

During calendar year 2018, the new distributed generation program tariff was not yet implemented for any utility. The Commission approved tariffs for DTE Electric and Upper Peninsula Power Company during 2019.

### Distributed Generation Program Tariff: For projects 150 kW and under and methane digesters up to 550 kW.

- Customers pay the full retail rate for electricity deliveries from their electric provider and receive the power supply portion (reduced by transmission charges for DTE Electric) of the retail rate for all on-site generation delivered to the utility's distribution system. The power supply portion represents the utility's full retail power supply costs for both capacity and energy.
- Customers pay a combined \$50 interconnection and program application fee, study fees and any required distribution system upgrade costs.
- Customers are not subject to standby charges.

### Legacy Net Metering Program Data

Customer participation in the legacy net metering program increased from 3,277 customers and 3,427<sup>9</sup> installations in 2017 to 5,219 customers and 5,379 installations in calendar year 2018.<sup>10</sup> At the end of 2018, the total capacity of installations was approximately 43,481 kilowatts (kW), an increase of 13,910 kW from the previous calendar year. Although this represents a 47% increase in program size over 2017, it still is only 0.048% of Michigan's total retail electricity sales.<sup>11</sup>

Table 1 summarizes legacy net metering program customers and capacity by electric provider for all three program size categories.<sup>12</sup> For customers of utilities where the new distributed generation program tariff is not yet in effect, category 1 is available to new customers until the program size reaches 0.5% of the electric provider's average in-state peak load for the preceding five calendar years.<sup>13</sup> As of year end 2018, Consumers Energy and DTE Electric have 24 megawatts (MW) or 66% and 38 MW or 69% of category 1 program space remaining, respectively. For customers of utilities where the new distributed generation program tariff is not yet in effect, category 2 is available new customers until the program size reaches 0.25% of the electric provider's average in-state peak load for the preceding five calendar years. Until the program size reaches 0.25% of the electric provider's average in-state peak load for the preceding five calendar years. Consumers Energy and DTE Electric have 6.7 megawatts (MW) or 63% and 2.2 MW or 92% of category 2 program space remaining, respectively. Tables 2 and 3 show peak load and program size information for each rate-regulated electric provider for category 1 and category 2, respectively. Category 3 has limited participation with only two current customers.

During this reporting period Alger Delta, Cloverland, Consumers Energy, DTE Electric, Great Lakes Energy, Homeworks Tri-County, Indiana Michigan, Thumb Electric, Upper Peninsula Energy Resources Corporation, and Upper Peninsula Power Company reported a combined total of 136 customers participating in the category 2 size range, which is an increase from 107 customers reported last year. Even with the growth in category 2 projects, category 1 projects still account for 76% of the total program installed capacity. The state's two largest utilities, Consumers Energy and DTE Electric, host 88% of the statewide total program capacity. Ninety-four percent of program participants have installed solar projects as opposed to wind turbines or hydroelectric projects.

<sup>&</sup>lt;sup>9</sup> The number of installations exceeds the number of customers due to some customers having multiple installations.

<sup>&</sup>lt;sup>10</sup> A complete list of Projects by utility, ZIP code, type and size is provided at the MPSC's DG Program website www.michigan.gov/documents/mpsc/2018\_Legacy\_Net\_Metering\_Data\_672131\_7.pdf.

<sup>&</sup>lt;sup>11</sup> The Energy Information Administration reports 2017 retail sales of 101,899,093 MWh for Michigan. See Michigan Electricity Profile: <u>https://www.eia.gov/electricity/state/michigan/</u>. A 13% capacity factor was assumed for the program generators.

	<u> </u>					
Company	Category 1 Customers	Category 1 Nameplate Capacity (kW)	Category 2 Customers	Category 2 Nameplate Capacity (kW)	Category 3 Customers	Category 3 Nameplate Capacity (kW)
Alger Delta*	33	155	1	90		
Alpena	22	91				
Cherryland*	31	94		-		
Cloverland	34	122	1	27		
Consumers Energy	1,805	12,429	81	6,668	1	190
DTE Electric	2,576	16,727	36	2,175	_	-
Direct Energy	3	7		_	_	-
Great Lakes Energy	135	780	2	125	1	400
Homeworks Tri-County	22	168	2	93	-	
Indiana Michigan	94	672	6	225		
Midwest	54	364		-	_	_
Ontonagon	37	189				
Presque Isle*	22	93				
Thumb	31	258	1	40		
UPPCo	132	734	5	225		
UMERC	46	292	1	23		
Xcel	4	25				
Total	5,081	33,200	136	9,691	2	590

### Table 1: Legacy Net Metering Program Customer and Capacity Data

Alger Delta, Cherryland, Cloverland, Great Lakes, Homeworks Tri-County, Midwest, Ontonagon, Presque Isle, and Thumb are member-regulated cooperatives and not required to offer the program. \*Alger Delta, Cherryland and Presque Isle data is from previous reporting years.

Source: 2018 Electric Provider Annual Program Reports Case U-15787

<sup>&</sup>lt;sup>12</sup> Category 1: Projects up to 20 kW incorporating IEEE 1547 certified inverters. Category 2: Projects greater than 20 kW and no larger than 150 kW and non-inverter based 20 kW and under projects. Category 3: Methane Digester projects up to 550 kW.

 $<sup>^{\</sup>rm 13}$  UPPCO's Category 1 program reached its program size cap and was closed on July 22, 2016.

<sup>&</sup>lt;u>https://mi-psc.force.com/s/filing/a00t0000005pZWIAAM/u157870235</u>. However, the Commission approved a settlement in UPPCO's last rate case which doubled the program size and reopened the program. MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

## Table 2: Legacy Net Metering Program Size DetailsRate Regulated Electric Providers

Company	No. of Customers	In-State Peak Load (5-Year Avg) (kW)	Category 1 Cap 0.5% of Peak Load (kW)	Current Participating Nameplate Capacity (kW)	Space Remaining (kW)	% Remaining
Alpena	22	64,800	324	91	233	71%
Consumers Energy	1,805	7,281,200	36,406	12,429	23,977	66%
DTE Electric	2,576	10,868,800	54,344	16,727	37,617	69%
Indiana Michigan	94	831,400	4,157	672	3,485	84%
UPPCo <sup>14</sup>	132	119,748	<b>1,198</b> <sup>15</sup>	734	464	39%
UMERC	46	113,505 <sup>16</sup>	567	292	275	49%
Xcel	4	28,200	141	25	116	82%
Source: 2018 Electric Provider Annual Program Reports Case U-15787						

Category 1: 20 kW and Under

<sup>14</sup>UPPCO's Category 1 program reached its program size cap was closed on July 22, 2016.

<sup>&</sup>lt;u>https://mi-psc.force.com/s/filing/a00t000005pZWIAAM/u157870235</u>. However, the Commission approved a settlement in UPPCO's last rate case which doubled the program size and reopened the program. MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

<sup>&</sup>lt;sup>15</sup> The Commission approved a settlement in UPPCO's last rate case which doubled the program size and reopened the program. Table 2 reflects the doubled program size. MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

<sup>&</sup>lt;sup>16</sup> UMERC is a new utility and its in-state peak load is based on an average of 2017 and 2018 data only.

## Table 3: Legacy Net Metering Program Size DetailsRate Regulated Electric Providers

Company	No. of Customers	In-State Peak Load (5-Year Avg) (kW)	Category 2 Cap 0.25% of Peak Load (kW)	Current Participating Nameplate Capacity (kW)	Space Remaining (kW)	% Remaining
Consumers Energy	81	7,281,200	18,203	6,668	11,535	63%
DTE Electric	36	10,868,800	27,172	2,175	24,997	92%
Indiana Michigan	6	831,400	2,079	225	1,854	89%
UPPCo	5	119,748	<b>598</b> <sup>17</sup>	225	373	62%
UMERC	1	113,505 <sup>18</sup>	284	23	261	92%
Source: 2018 Electric Provider Annual Program Reports Case U-15787						

Category 2: >20 kW to 150 kW

<sup>&</sup>lt;sup>17</sup> The Commission approved a settlement in UPPCO's last rate case which doubled the program size and reopened the program. Table 3 reflects the doubled program size. MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

<sup>&</sup>lt;sup>18</sup> UMERC is a new utility and its in-state peak load is based on an average of 2017 and 2018 data only.

Figures 1 through 3 show legacy net metering program participation information.





Figure 2: Total Michigan Legacy Net Metering Program Customers







Maps showing location information, based on ZIP code and county, for the total legacy net metering program, solar only and wind only customers are displayed in Figures 4-6.

### Figure 4: Legacy Net Metering Program Customers by County

Source: ZIP codes of participating customers are provided to MPSC Staff by Michigan electric providers. Customer identification information (name, address, account number, etc.) is confidential and protected from disclosure.



### Figure 5: Solar Legacy Net Metering Program Customers by County

Source: ZIP codes of participating customers are provided to MPSC Staff by Michigan electric providers. Customer identification information (name, address, account number, etc.) is confidential and protected from disclosure.



### Figure 6: Wind Legacy Net Metering Program Customers by County

Source: ZIP codes of participating customers are provided to MPSC Staff by Michigan electric providers. Customer identification information (name, address, account number, etc.) is confidential and protected from disclosure.



Figures 7 through 9 show a histogram breakdown of legacy net metering program project sizes.





Figure 8: Histogram of Solar Legacy Net Metering Program Installations by Project Size





### Figure 9: Histogram of Wind Legacy Net Metering Program Installations by Project Size

### **Distributed Generation Program Implementation**

PA 341 and 342 of 2016 provide for the Commission to implement a new distributed generation program. The Commission issued an order on July 12, 2017 finding that the net metering program shall continue as the distributed generation program (legacy net metering program) until the new distributed generation program tariffs are approved as part of a utility's rate case.<sup>19</sup> Existing legacy net metering customers and new customers who enter the legacy net metering program during this interim period may continue to net meter under the legacy net metering program for 10 years from the date of their initial enrollment.

<sup>&</sup>lt;sup>19</sup> https://www.michigan.gov/documents/mpsc/u-18383 7-12-17 579158 7.pdf

The Report on the MPSC Staff Study to Develop a Cost of Service-Based Distributed Generation Program Tariff was issued on February 21, 2018.<sup>20</sup> The study recommended a conceptual tariff based on a new approach called the inflow/outflow billing mechanism. The method separates power inflows from power outflows, relying on two distinct and independent sets of meter data to establish consistent and appropriate cost-of-service allocators and billing determinants, rather than netting the two as is done for net metering. This change in methodology is a fundamental attribute of the inflow/outflow billing method. The Commission issued an order on April 18, 2018 directing all utilities to include a tariff based on the inflow/outflow tariff proposed by Staff in any post-June 1, 2018 rate case filings.<sup>21</sup> The Commission provided an Issue Brief on the topic of distributed generation on its website.<sup>22</sup> A utility may also file an alternate distributed generation program tariff proposal of its own design. The new distributed generation tariff will go into effect, as directed by the Commission, at the conclusion of each utility's rate case filed after June 1, 2018.

<sup>&</sup>lt;sup>20</sup> <u>https://www.michigan.gov/documents/mpsc/MPSC Staff DG Report with Appendices 614779 7.pdf</u>

<sup>&</sup>lt;sup>21</sup> https://www.michigan.gov/documents/mpsc/U-18383 4-18-18 620947 7.pdf

<sup>&</sup>lt;sup>22</sup> https://www.michigan.gov/documents/mpsc/Distributed Generation Issue Brief 4-18-18 620957 7.pdf

### Distributed Generation Program Tariff Implementation Status DTE Electric

DTE Electric's rate case including a proposed distributed generation program tariff was filed on July 6, 2018 and an order was issued on May 2, 2019.<sup>23</sup> The order adopted an inflow/outflow billing method. The inflow portion is billed based on standard retail rates. The outflow credit is based on power supply less transmission charges (i.e., the credit represents DTE Electric's full retail power supply costs for capacity and energy). The Commission prepared an <u>Issue Brief</u> describing DTE Electric's distributed generation program tariff.<sup>24</sup>

### **Upper Peninsula Power Company**

The Upper Peninsula Power Company (UPPCO) filed a rate case including a proposed distributed generation program tariff on September 21, 2018.<sup>25</sup> An order approving a settlement for this case was issued on May 23, 2019. In the settlement, UPPCO agreed to expand the size of its program to 2% of its average in-state peak load for the preceding five years. Within the 2% program capacity, 1% will be reserved for category 1 distributed generation customers. The remaining 1% will be split evenly, with 0.5% allocated to category 2 distributed generation customers and 0.5% allocated to category 3 distributed generation customers. The settlement included a distributed generation program tariff based on the inflow/outflow billing method. The inflow portion will be billed based on standard retail rates. The outflow credit is equal to the power supply component of the retail rate.

### Indiana Michigan Power Company

Indiana Michigan Power Company (I&M) filed a rate case including a proposed distributed generation program tariff on June 24, 2019.<sup>26</sup> According to the legally mandated time frame for rate cases, a Commission order is expected by the end of April 2020.

### Conclusion

The legacy net metering program size increased 47% during 2018 to 43,481 kW and nearly 2,000 customers were added bringing total customer participation to 5,219 customers. While the program continues to grow, it still represents only 0.048% of Michigan's total retail electricity sales. Ninety-four percent of participants have installed solar projects as opposed to wind turbines or hydroelectric projects.

<sup>&</sup>lt;sup>23</sup> MPSC Case No. U-20162: <u>https://mi-psc.force.com/s/global-search/20162</u>

<sup>&</sup>lt;sup>24</sup> https://www.michigan.gov/documents/mpsc/DTE\_DG\_lssue\_Brief\_05-02-2019\_653973\_7.pdf

<sup>&</sup>lt;sup>25</sup> MPSC Case No. U-20276: <u>https://mi-psc.force.com/s/global-search/20276</u>

<sup>&</sup>lt;sup>26</sup> MPSC Case No. U-20359: <u>https://mi-psc.force.com/s/global-search/20359</u>

The new distributed generation program tariff has been approved for DTE Electric and Upper Peninsula Power Company. The Commission is continuing the process of implementing the distributed generation program as required by Public Acts 341 and 342 of 2016.