

MICHIGAN MARKET BRIEF: CORPORATE RENEWABLE ENERGY PURCHASING

Based on Analysis by Meister Consultants Group | January, 2016

Overview

A growing majority of the world's largest corporations have set sustainability targets that involve increased utilization of renewable energy. These companies have realized that renewable energy investments have a positive impact on the bottom line because they offer a fixed-priced, long-term power supply that protects against rising electricity costs. Meeting these corporations' sustainability targets will require thousands of additional megawatts (MW) of renewable energy, and represents a tremendous market opportunity.

A number of renewable energy projects are already operational across Michigan, and increased demand from corporate buyers will drive additional investment and job creation. However, policy barriers that prevent willing buyers from acquiring renewable resources are stifling market growth and limiting options for companies seeking opportunities to meet corporate financial and sustainability objectives.

This brief discusses ways to expand opportunities for corporations to obtain additional renewable energy resources in Michigan, and examines how the elimination of market barriers can help the state continue to attract and retain companies with sustainability targets.

Michigan's Largest Corporate Citizens Want Renewable Energy

Leading corporations nationwide have demonstrated their desire to purchase renewable energy. As of 2014, **43% of Fortune 500 companies and 60% of Fortune 100 companies have set climate and/or clean energy targets,**¹ and as of December 2015, **49 major corporations, representing a market cap of \$15 trillion, have signed on to the Corporate Renewable Energy Buyers' Principles** (see appendix).

The priorities identified by these businesses include **more choice in renewable energy procurement, access to longer-term fixed-price energy, access to third-party ownership and financing, and the ability to work with utilities and regulators to expand purchasing choices.**² Companies that have expressed an interest in using renewable energy and have a presence in Michigan include Google, Switch, Nestle, Ikea, and many others. In addition, many of the largest firms headquartered in Michigan – including General Motors, the Ford Motor Company, the Dow Chemical Company, and Whirlpool – are actively seeking additional renewable energy sources to power their operations.

Many of these corporations are leading by example with their investments in advanced energy technologies. Expanded market participation by the state's business community will translate into significant demand for thousands of additional megawatts of renewable energy.

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1. Power Forward 2.0: How American Companies Are Setting Clean Energy Targets and Capturing Greater Business Value; 2014, David Gardiner & Associates, et al.
 2. World Resources Institute (2014). Corporate Renewable Energy Buyers' Principles: Increasing Access to Renewable Energy. Available at: <http://buyersprinciples.org/resource/corporate-renewable-energy-buyers-principles/>

Some of Michigan's largest corporations, including Herman Miller, Amway, and Dow Chemical, have used Michigan's limited Retail Open Access provisions as a means of purchasing renewable energy from independent power producers.³ However, most Electric Choice programs in Michigan—including those operated by DTE and Consumers Energy, which together serve over 80% of Michigan electricity customers⁴—have reached their limits and are closed to new participation.⁵

Other Michigan corporations have opted to build their own sources of renewable power. GM has developed eleven solar projects totaling over 2 MW at its facilities across the state, and IKEA has built the state's largest solar array—a 977 kW project—at its Canton store.⁶ Some Michigan companies have sought to develop larger projects by selling the power produced from on-site generation to the local utilities, as GM has done with the 800 kW solar project at its Warren facility.⁷

Michigan companies may also have the opportunity to procure renewable resources through agreements with their utility provider. The data company Switch, for example, which recently announced plans to develop the largest data center east of the Mississippi outside of Grand Rapids, Michigan, will work with Consumers Energy to allow the SuperNAP data center to run entirely on renewable energy.⁸

Finally, a number of Michigan-headquartered companies have actively sought out opportunities to power their operations outside of the state with renewable energy. Just last year, GM announced it was directly procuring wind energy to power a number of manufacturing facilities in Mexico through a long-term power purchase agreement, while Dow announced a similar agreement last year for its facility in Freeport, Texas.^{9,10}

Michigan's Renewable Energy Standard

In 2008, Michigan implemented a Renewable Energy Standard (RES) that required the state's utilities to source 10% of their power from qualified renewable sources by 2015. The state's utilities have met this target and are not required to increase their renewable energy resources.

Currently, the state legislature is considering implementing a voluntary goal that 30% of energy come from a combination of energy efficiency and renewable energy by 2025. However, this goal would not place any binding requirements on utilities to develop or purchase new renewable energy resources.¹¹

3. <http://www.michiganleanchoice.org/>

4. Energy Information Administration Form 861 Database, <https://www.eia.gov/electricity/data/eia861/>

5. Michigan has seven IOUs: Consumers Energy (Consumers), Cloverland Electric Cooperative (Cloverland), DTE Electric Company (DTE), Indiana Michigan Power Company (I&M), Upper Peninsula Power Company (UPPCo), Wisconsin Electric Power Company (WEPCo), and Wisconsin Public Service Corporation (WPSC). In 2014, the electric choice programs of Consumers, DTE, UPPCo, and WEPCo were fully subscribed at the 10 percent cap throughout the year, and there are approximately 11,000 queued customers statewide. <http://www.dleg.state.mi.us/mpsc/electric/restruct/status.htm>

6. SEIA Corporate Solar Projects database, <http://www.seia.org/map/corporate-solar-projects.php>

7. <http://www.freep.com/story/money/cars/general-motors/2015/10/19/gm-dte-launch-solar-project-warren/74211618/>

8. http://www.mlive.com/business/west-michigan/index.ssf/2015/11/switch_confirms_plans_for_5_bi.html; This follows the 2015 announcement that Switch was partnering with its utility NV Energy to provide 100% renewable energy to power all their datacenters in that state: <http://vegascinc.com/business/2016/jan/05/las-vegas-based-switch-announces-it-will-go-100-pe/>

9. <http://www.triplepundit.com/2015/02/gm-wind-energy-mexico/>

10. <http://www.aiche.org/chenected/2015/08/dow-buying-texas-wind-power-its-freeport-plant>

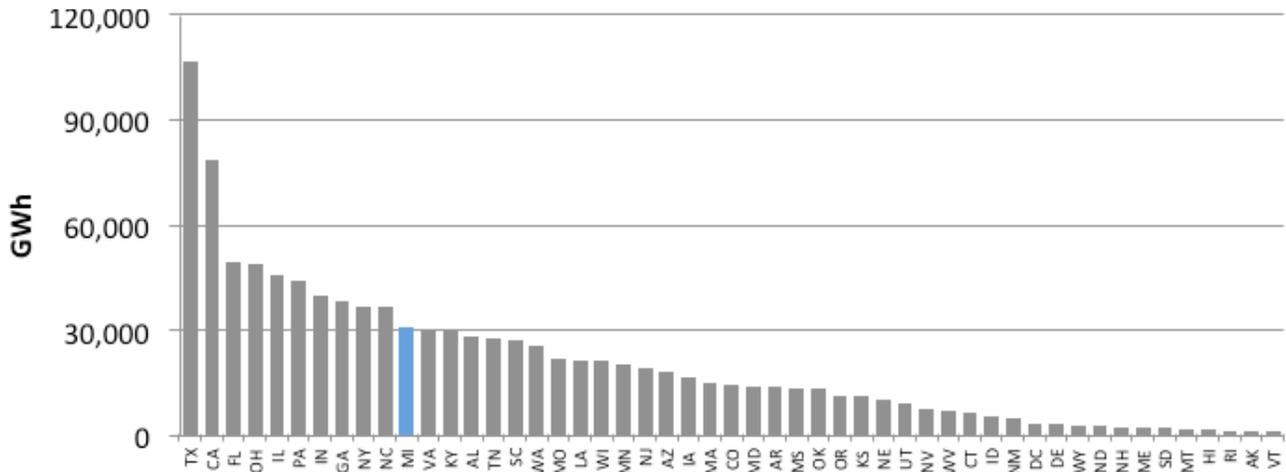
11. <http://www.utilitydive.com/news/michigan-lawmakers-add-30-renewables-goal-to-energy-legislation/408823/>



Michigan's Market Opportunity

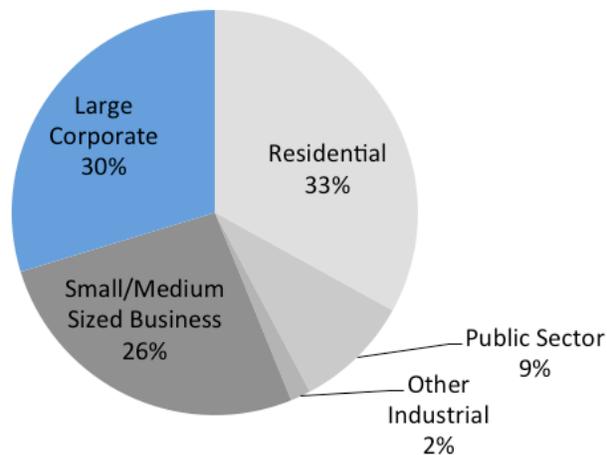
Large-scale commercial and industrial (C&I) customers consume a considerable amount of energy in Michigan, which ranks 11th nationwide in terms of annual electric consumption by large corporate customers.¹²

Figure 1. Annual Large Corporate Electricity Consumption, by State



Michigan corporations with more than 500 employees account for roughly 30,000 gigawatt-hours (GWh)¹³ of annual electricity consumption,¹⁴ more than a quarter of the state's total electricity demand.

Figure 2. Annual Electricity Consumption in Michigan by Sector



A growing share of this consumption is being met with renewable energy resources. Driven primarily by the state's RES, Michigan has developed a substantial wind energy industry. Nearly 900 turbines across the state provide more than 1,500 MW in generating capacity, enough for Michigan to rank 15th nationwide in installed wind energy capacity.¹⁵ If just five percent of Michigan's large corporate consumers chose to meet their

12. "Market Analysis for Corporate Renewable Energy Purchasing," Meister Consulting Group, September 2015, based on U.S. Energy Information Administration and Census Bureau data
 13. One gigawatt-hour (GWh) equals 1,000 megawatt-hours (MWh); one megawatt-hour equals 1,000 kilowatt-hours (kWh). A typical residence in Michigan consumes about 7,800 kWh annually (EIA Form 861 database).
 14. "Market Analysis for Corporate Renewable Energy Purchasing," Meister Consulting Group, September 2015, based on U.S. Energy Information Administration and Census Bureau data.
 15. <http://awea.files.cms-plus.com/FileDownloads/pdfs/Michigan.pdf>



electricity needs by purchasing directly from Michigan wind energy producers, it would spur the development of over 500 MW of new wind energy.¹⁶

Michigan has yet to meet its solar potential. The state solar industry grew 33% in 2014, but new commercial installations amounted to less than a megawatt,¹⁷ constrained by rules that complicate the development of solar projects larger than 150 kW. Of the 30,000 GWh of electricity used by large Michigan corporations each year, an estimated 12,600 GWh is used at sites that are likely to have the potential for on-site solar generation.¹⁸ This equates to approximately 8,300 MW of solar capacity just to meet the potential for onsite generation for large corporations in Michigan. Meeting just one percent of this demand would result in the addition of more than 80 MW in on-site solar projects¹⁹ – more than 88 times the total for 2014 business installations.

Developing these renewable energy resources would lead to substantial economic development benefits for Michigan. Building 500 MW of new wind energy resources would create an estimated employment impact of 3,000 job-years in Michigan, and spur \$370 million in economic development. Installing 80 MW of new solar resources would create an estimated employment impact of 1,800 job-years in Michigan, and spur \$234 million in economic development.²⁰

Barriers Limiting Market Growth

With a substantial number of its largest companies actively seeking opportunity to obtain renewable energy resources to power their operations, Michigan is well placed to become a national leader in corporate renewable energy procurement. However, **a number of policy barriers currently exist that limit market growth.**

Fortunately, solutions exist. Michigan could enable market growth by expanding opportunities for corporations to procure renewable energy, either through the state's Retail Open Access market or, as in the case of Switch, through agreements to obtain renewable energy through their utility provider. In addition, modifying the state's Net Energy Metering policies to lift the restrictive limit on system capacity would also assist those companies looking to generate more of their energy on-site. Neither of these options involves government mandates or tax incentives. Rather, Michigan can position itself to capture the economic benefits of corporate renewable purchases simply by working with the business community to identify solutions.

Retail Open Access and Utility Agreements

In seventeen states—including Ohio, Illinois, and Pennsylvania, and the District of Columbia—Retail Open Access programs give utility customers the ability to choose where their energy comes from. These customers still pay their local utility for the transmission and distribution of electricity, but have the option of purchasing electricity from a range of competitive suppliers.

16. Assuming a solar capacity factor of 33.9% from EIA 2014 wind energy production data, http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_6_07_b.

17. <http://www.seia.org/state-solar-policy/michigan>

18. Market Analysis for Corporate Renewable Energy Purchasing," Meister Consulting Group, September 2015, based on U.S. Energy Information Administration and Census Bureau data, the calculated distribution of energy consumption across industries, and the likelihood that various classes of commercial buildings would be able to accommodate on-site solar.

19. Assuming a solar capacity factor of 17.3% (NREL (2012). U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis. Available at: <http://www.nrel.gov/docs/fy12osti/51946.pdf>).

20. Calculated from National Renewable Energy Laboratory (NREL) Jobs and Economic Development Impact Models, available at: <http://www.nrel.gov/analysis/jedi/>. Economic development studies typically report employment impacts in terms of job-year (the number of jobs created by a project multiplied by the number of years those job impacts are expected to endure), to account for both short-term construction job as well as long-term operational jobs. Economic benefits encompass the total economic activity that a project's development would drive in a state, including both project-related spending and salaries, as well as the induced market impacts resulting from that spending.



In Michigan and six other states, Retail Open Access is available on a limited basis. Michigan's six private utilities are required to provide customer choice, but may cap their programs at ten percent of their total sales. Four of these utilities—including DTE and Consumers Energy—have met their caps and are no longer accepting new applications.

Michigan corporations that acted early—including Herman Miller, Amway, and Dow Chemical²¹—have taken advantage of Retail Open Access to purchase power directly from renewable energy developers, but in most cases the option is no longer available to additional customers.

Importantly, options to procure renewable resources may also be available through the regulated market. As noted above, Switch recently announced an agreement with Consumers Energy to provide 100% renewable energy to power the new SuperNAP data center it is constructing near Grand Rapids, Michigan. Ensuring that all companies have the opportunity to directly contract with their utility providers for renewable energy provides an additional option to expand corporate renewable energy purchases.

Net Energy Metering

Net Energy Metering (NEM) refers to the way that a renewable energy system owner is billed for power by their utility. Net-metered customers are charged only for the electricity that they consume over the course of the month, *net of the total amount of electricity they produce and put back on the grid over the course of the month.*

For example, a customer that consumes 10,000 kWh in a month but produces 8,000 kWh from a renewable energy project is only billed for 2,000 kWh. NEM is a critical enabling policy for on-site renewable energy—95% of new distributed solar capacity is installed through net metering tariffs.²²

Some states limit the size of renewable energy systems that can qualify for Net Energy Metering. In Michigan, this limit is 150 kW, though charges may be incurred for systems as small as 20kW. For reference, a typical residential home could completely meet its energy needs with a 5-10 kW rooftop solar system.

However, for large electrical customers in Michigan—many of which have electricity needs that would require a renewable energy system well over a megawatt in size—the 150 kW limit is highly restrictive. A company installing a renewable energy system large enough to meet any significant portion of its energy needs would not be able to benefit from net metering, reducing the system's value.

The recommended best practice is to allow customers to net meter renewable energy projects sized to produce the full amount of energy that they consume annually. States that have implemented this approach include Arizona, Colorado, Georgia, New Jersey, and Ohio.

21. <http://www.michigancleanchoice.org/>

22. Interstate Renewable Energy Council (2014). U.S. Solar Market Trends 2013. Available at: <http://www.irecusa.org/annual-u-s-solar-market-trends-report/>



Recommendations:

Solutions to Increase Corporate Renewable Energy Access

Michigan's pro-business environment has served to attract big and small corporations alike. As corporate interest in renewables grows, so do the state's opportunities to capture the economic benefits of this emerging market.

Michigan has the potential to see significant growth in its renewable energy market, driven by corporate buyers, but market barriers are blocking the path forward and prevent the state's biggest corporate citizens from obtaining the renewable energy they want, choking investment in the state's renewable energy infrastructure.

Fortunately, solutions exist. Michigan could enable market growth by allowing local corporations to **choose to purchase renewable energy** from independent producers, **contract with their local utility provider** to procure renewable energy, and by **raising the Net Energy Metering limit** to enable on-site renewable energy resources at a scale useful to corporate customers.

Eliminating the barriers faced by corporate customers that want to buy renewables is critical to attracting the private investment that will drive economic growth, and allow the Michigan renewable energy market to realize its full potential.



CORPORATE RENEWABLE ENERGY BUYERS' PRINCIPLES: INCREASING ACCESS TO RENEWABLE ENERGY

49 COMPANIES

42 MILLION MWH
OF DEMAND FOR
RENEWABLE ENERGY

\$5 TRILLION IN MARKET CAP



23. <http://buyersprinciples.org/resource/corporate-renewable-energy-buyers-principles/>

