

Renewable Energy Question 24: *What has Michigan done in the past regarding carve-outs for certain renewable sources? What have other jurisdictions done? What are the impacts of such carve outs on adaptability, affordability, reliability, and environmental protection?*

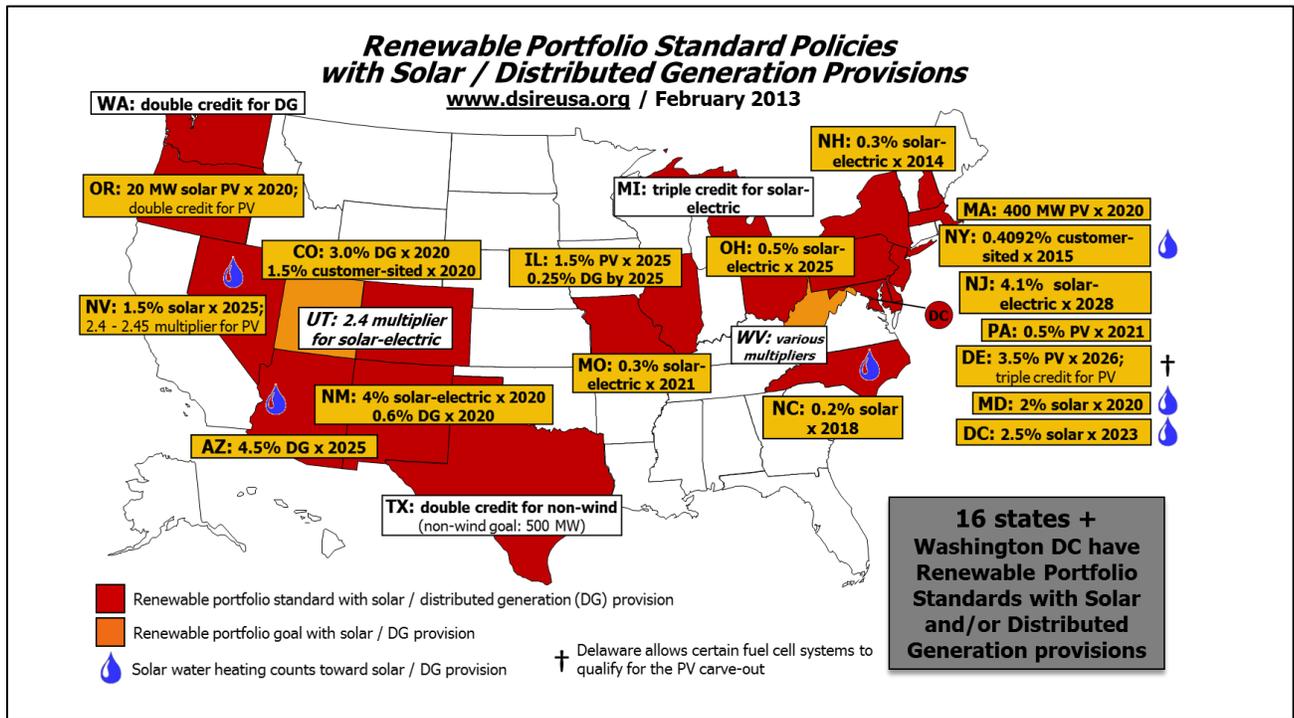
Executive Summary

1. Sixteen states and the District of Columbia have adopted solar and/or other distributed generation carve-outs as part of their Renewable Portfolio Standards (RPS). Five states, including Michigan, have employed credit multipliers for solar or other distributed generation, though Michigan does not have a solar carve-out
2. The existing credit multiplier design for solar generation has contributed to incentivizing solar installation and containing RPS compliance costs in Michigan. DTE Energy is committed to the development of 22 MW of solar generation
3. A solar carve-out in Michigan could negatively affect the affordability and adaptability of the RPS policy given the significant cost premiums experienced in the states with solar-specific mandates and the uncertainty of federal-level renewable energy policies in the future

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Sixteen states and the District of Columbia have adopted solar and/or other distributed generation carve-outs as part of their RPS policies, stipulating that a portion of the required renewable energy percentage of overall retail sales be derived from solar or other distributed generation resources. Five states, including Michigan, have employed credit multipliers for solar or other distributed generation. Nevada, Oregon, and Delaware have both a solar carve-out and a credit multiplier.

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Michigan's RPS policy contains a series of bonus credits, termed Michigan Incentive Renewable Energy Credits, for each megawatt-hour (MWh) of electricity generated by certain types of renewable resources. These credits act in addition to the single credit that a facility receives for producing 1 MWh of electricity from qualified resource. The two types of bonus credits that are applicable to solar generation are:

- Electricity produced using solar power receives an additional 2 credits per MWh
- Renewable electricity produced at peak demand times by technologies other than wind receives an additional 1/5 credit per MWh

Therefore, a solar electric facility in Michigan qualifies for at least 3.2 credits for each MWh generated. (Note: if the solar electricity is produced using equipment manufactured within Michigan or Michigan workforce, additional credits can be earned.)

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DTE Energy's SolarCurrents Program

Through the SolarCurrents program, DTE Energy is committed to the development of 15 MW of company-owned solar generation plants and 7 MW of customer-owned solar generation plants. As of March 18, 2013, the company-owned SolarCurrents program has 14 solar photovoltaic (PV) systems with 5.15 MW total capacity installed; the customer-owned SolarCurrents program has 579 systems with 4.91 MW total capacity installed and another 84 projects with 3.56 MW total capacity pending completion.

At the current phase of subscription, the customer-owned SolarCurrents program provides up-front Renewable Energy Credit (REC) payments for both residential and non-residential customers. Residential customers receive \$0.20 cents/Watt of installed solar PV. Non-residential customers receive \$0.13 cents/Watt of installed solar PV. The company purchases the remaining RECs through a monthly energy bill credit equal to \$0.03/kWh for residential customers and \$0.02/kWh for non-residential customers. The REC agreement runs through August 31, 2029.

The company-owned SolarCurrents program includes large scale photovoltaic projects that are either located on DTE or customer premises. Customers selected to host a solar PV project receive a one-time, upfront construction payment to cover any inconvenience during installation in addition to a continuing easement payment over the project life.

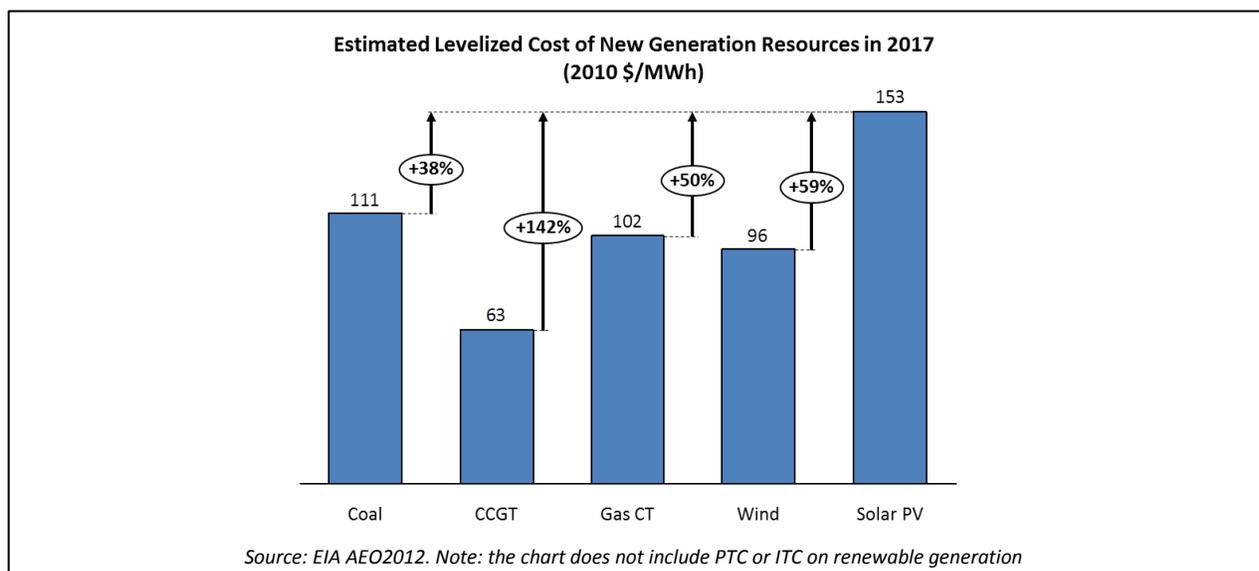
3. A solar carve-out in Michigan could negatively affect the affordability and adaptability of the RPS policy given the significant cost premiums experienced in the states with solar-specific mandates and the uncertainty of a federal-level clean energy policy

An independent study by the Lawrence Berkeley National Laboratory¹ suggests: *"A prime disadvantage of set-asides [solar carve-outs], ..., is the risk that they will put upward pressure on RPS compliance costs, if solar is more expensive than other sources of renewable generation. Credit multipliers do not entail this risk, as solar resources would be used to meet the RPS target only to the extent that doing so is lower cost than the alternate renewable options available. Credit multipliers also have the advantage of providing a means by which states can directly indicate the degree to which they value particular types of renewable resources over others."*

¹ R. Wiser and G. Barbose. Supporting Solar Power in Renewable Portfolio Standards: Experience from the United States. Oct 2010. <http://eetd.lbl.gov/ea/ems/reports/lbnl-3984e.pdf>. Accessed March 18, 2013

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According to forecasts by the Energy Information Administration (EIA), solar PV is one of the most expensive renewable generation technologies. Solar PV is nearly 150% more expensive than natural gas combined cycle plant and 60% more expensive than wind.²



The significant cost premiums associated with solar generation are further demonstrated by the experiences in the states with solar-specific mandates.

Pennsylvania: Pennsylvania spent 34% of the total compliance cost to meet its solar RPS requirement during the 2011 reporting period. In contrast, solar generation only accounted for 0.221% of the total renewable generation qualified for RPS in that year.³ (PA RPS target: 18% by 2021 including 0.5% solar carve-out)

Ohio: As discussed in the Alternative Energy Portfolio Standard Report by the Ohio Public Utilities Commission⁴, *“the solar requirements, and particularly the in-state solar requirements, proved challenging. These challenges resulted in numerous applications before the Commission seeking force majeure determinations, in which companies argued that there were inadequate existing solar resources to achieve compliance.”* The report further indicated electric providers in Ohio were only able to meet 80% of the in-state solar requirements in 2010 and 22% of the requirement in 2009. (OH RPS target: 25% by 2025 including 0.5% solar carve-out)

² U.S. Energy Information Administration, Levelized Cost of New Generation Resources in the Annual Energy Outlook 2012.

³ Pennsylvania Public Utility Commission. 2011 Annual Report Alternative Energy Portfolio Standards Act of 2004.

http://www.puc.pa.gov/electric/pdf/AEPS/AEPS_Ann_Rpt_2011.pdf. Accessed March 18, 2013

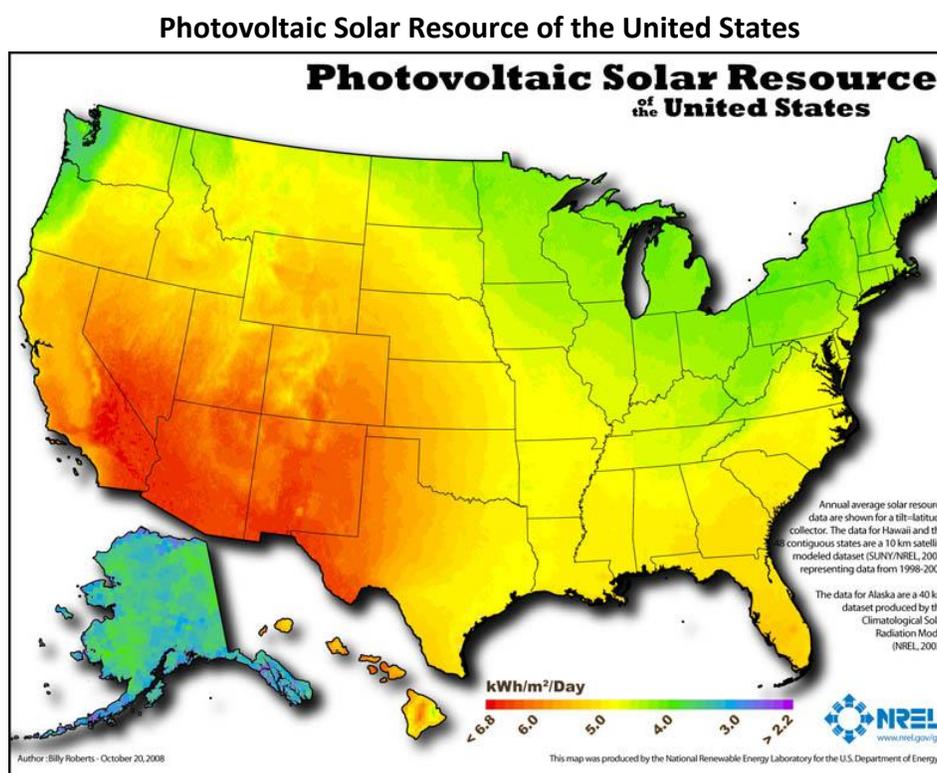
⁴ Ohio Public utilities Commission. Alternative Energy Portfolio Standard Report – 2009 & 2010.

<http://dis.puc.state.oh.us/TiffToPDF/A1001001A12H15B51144H86168.pdf>. Accessed March 18, 2013

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New Jersey: Electric providers in New Jersey were only able to meet 72% of the RPS solar requirement in reporting year 2010 and 58% in 2009 with Solar Renewable Energy Credits. In reporting year 2010, New Jersey spent 90% of the total compliance cost to meet its solar RPS requirement, whereas solar generation only accounted for 3% of the total renewable generation required to meet its RPS target.⁵ (NJ RPS target: 20.38% by 2021 with additional 4.1% solar carve-out by 2028)

Michigan has one of the lowest solar potentials in the nation. Solar plants in Michigan would have lower capacity factors and higher levelized cost of energy than in other states. A solar carve-out in Michigan would incur a significant cost premium, placing an unjustified electric rate burden on Michigan customers and negatively affecting the affordability of the RPS policy.



In addition, the uncertainty of a federal level carbon policy and RPS standard makes adaptability and flexibility of state policy highly important. Both the U.S. House and Senate have made multiple attempts to enact a nation-wide clean energy policy in the past several years. None of the proposed bills include any carve-outs of any renewable resources. The flexibility to meet renewable obligations will be particularly valuable moving forward, as federal rules and policy on these topics come into play.

⁵ Office of Clean Energy, New Jersey's Board of Public Utilities. New Jersey's Renewable Portfolio Standard Rules. 2010 Annual Report. http://www.njcleanenergy.com/files/file/Final_2010_Annual_Report_for_New_Jersey_RPS.pdf. Accessed March 18, 2013