



September 27, 2019

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400 MW Review Public Comments. DOER.SMART@mass.gov
Cc: Kaitlin Kelly, Manager of Solar Programs, DOER (Kaitlin.Kelly@state.ma.us)

Dear Secretary Theoharides and Commissioner Judson:

On behalf of the Massachusetts Sierra Club, we write today to voice our concerns about how potential changes to the Solar Massachusetts Renewable Target (SMART) Program could, if not carefully calibrated, undermine the Commonwealth's ability to achieve our vital climate change and equity goals. Our suggestions in this letter are listed below:

- **The SMART Program should be expanded by 3200 MW**
- **Solar Access for Low Income and Minority Populations requires additional policy support**
- **DOER must provide the necessary incentives for large scale projects**
- **DOER should add an incentive for projects incorporating modules with manufacturer take-back/recycling commitments**

Introduction.

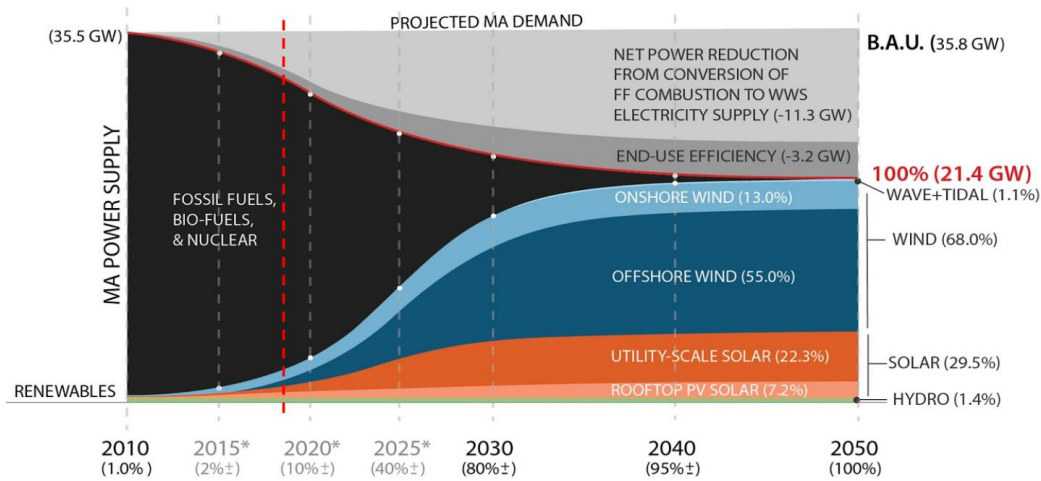
New evidence every day confirms what the scientists at the UN Intergovernmental Panel on Climate Change state: that we must make "rapid, far-reaching and unprecedented changes in all aspects of society" to protect human existence. The Massachusetts Sierra Club, with over 130,000 members and supporters, believes that income inequality and the climate crisis are inextricably linked. Three essential pillars are: 1) rapidly transitioning off of fossil fuels, 2) creating good, high-paying jobs; and 3) fighting for environmental justice. Environmental justice requires the equal and affordable access to renewable energy by all residents of Massachusetts including low to moderate-income tenants and homeowners who are not capable of installing solar on their roofs.

Aspects of the SMART Program 400 MW Review by DOER defeat the possibilities for meeting our climate mandates, for expanding our local economy, and for a just transition for low income and minority populations.

Massachusetts must be a leader – along with California and New York – in shaping our national transition to renewable energy. Accordingly we look forward to your consideration of the following comments.

SMART Program Should Be Expanded by 3200 MW.

Solar must play a significant part in achieving the GWSA 2050 mandate for 80% emissions reduction and the IPCC mandate for 100% renewable energy. The SMART program should reflect this reality which the proposed 800MW increment does not. Consider the following chart which plots the path to 2050:



Projected Energy Supply & Demand, **Massachusetts**

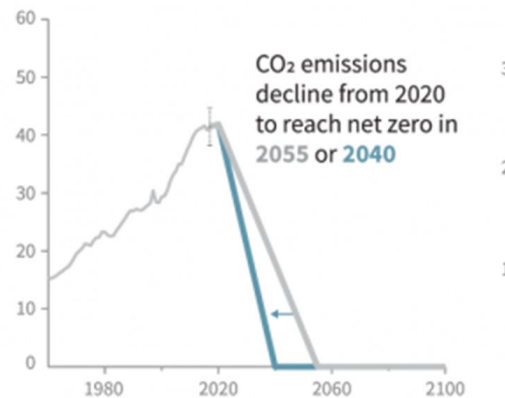
* 2015-2030 WWS % estimated based on 2010-2014 WWS market penetration and projected renewable energy supply (80% WWS by 2030).

Solutions Project, 2015

Source: <http://thesolutionsproject.org/wp-content/uploads/2015/07/solutions-ramp-MA-20150615.pdf>

A steep ramp up to the projected ~30% solar is now extremely urgent. The IPCC chart of emissions increases since 1960 shows that we are required to dramatically and immediately cut emissions, not merely reduce the rate of increase:

b) Stylized net global CO₂ emission pathways Billion tonnes CO₂ per year (GtCO₂/yr)



Faster immediate CO₂ emission reductions limit cumulative CO₂ emissions shown in panel (c).

“We have wasted 15 years of response time. If we waste another five years of response time, the story gets worse. The longer you wait, the faster you have to respond and the more expensive it will be.”¹

A steep ramp up is not possible with the past practice of a start-and-stop solar policy, of which the proposed 800MW expansion is the latest example. The 400 MW review is just starting more than nine months after SMART was oversubscribed. DOER should set a long term goal consistent with the urgency and innovative thinking required to take “rapid and far-reaching” climate action:

- A choppy solar policy does not span the permitting, development, interconnection, and installation cycles.
- Significant job growth in solar energy is possible, but the state’s solar industry needs to see that solar policy is in place that will support investments in hiring and training leading to long term job stability. (The state’s solar workforce has shrunk by about 30 percent, shedding around 4,372 jobs between 2015 and 2018.)

We support longer-term goals that will provide a clear planning path for policy makers, developers, employers, the financial community, ISO-NE, utilities, educators, and students seeking career opportunities in renewable energy to invest in this significant shift to renewable energy in Massachusetts.

Solar Access for Low Income and Minority Populations requires additional policy support.

The National Center for Children in Poverty reports that as of 2016 in Massachusetts there were 765,548 low income² families with children (and 29% of children live in low-income families)³.

The US Census data for 2013-2017 reports 2,585,715 households in Massachusetts. Based on these numbers, low income households represent 29.6% of the Commonwealth’s total. The percentage may be greater because not all low-income households are families⁴.

Effectively excluding 30% of the households from participating in solar energy, as is currently the case, makes attainment of the GWSA mandates or the UN IPCC mandate seem out of reach. On the other hand, making the policy changes to enable solar access for this 30% can result in a large increase in solar employment in the state (jobs), and reduce electricity cost for our most needy population.

DOER correctly notes that there are several issues with low income participation. We highlight two of them:

Complicated contracts. Shared solar requires complicated contracts that govern solar credits on ratepayer bills. These contracts make it hard for low-income households to receive guaranteed savings. Furthermore, low-income residents, and all residents, are reluctant to sign a contract because there have been scams related to electricity rates.

DOER should amend the current Massachusetts policy so that contracts and solar credit sales are no longer needed to share the benefits of solar with low-income households. Instead, solar credits can be shared at no-cost and without a contract with low-income households thereby guaranteeing savings and resolving the

¹ Gary Yohe, professor of economics, Wesleyan U.

² A family of 4 earning \$50,000 qualifies as very low-income in Boston in Boston-Cambridge-Quincy area as of April 2017. <https://www.vox.com/policy-and-politics/2017/4/20/15343720/housing-income-limits>

³ http://www.nccp.org/profiles/MA_profile_6.html

⁴ The US Census defines a family as “a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption”.

consumer protection concerns. One solution is allowing credits to appear directly on utility bills, thus removing the need for the department to audit or investigate complicated contract terms to punish solar companies that take advantage of the low-income adder without benefitting the offtakers.

Sharing solar credits between load zones and utilities. The majority of low income ratepayers are in urban areas where siting shared solar facilities is challenging or impossible, with the result that it must be possible for low income shared solar facilities to be in a different load zone or different utility's service area. We need one market for solar credits in the state, not separate fiefdoms. DOER needs to allow shared solar projects to share solar bill credits with any utility customer in the state, across load zones and utility service territories.

DOER must provide the necessary incentives for large scale projects.

DOER has clear evidence that attainment of a significant ramp up in renewable solar generation is not achievable without a significant number of large scale projects. DOER reports 47MW /month from large scale projects but only 8 MW /month from small scale projects.

There are many excellent motivations for incentivizing small roof top projects, but there are insurmountable barriers to achieving a large overall solar contribution from such projects, especially within the next few critical years before 2030:

- 80-90% of roofs are not suitable for solar for a variety of reasons – shading, need for expensive re-roofing, etc.
- Smaller projects have lower economies of scale, higher cost per MW
- Many early adopters have already “gone solar” – significant marketing and selling expense is required in addition to compelling electricity cost savings to motivate customers to make a long term financial commitment to solar.
- Ramping up the labor force required by developers trained to do quality work and to interact with a multitude of customers and for municipalities to handle a multitude of permits and inspections takes time (and a stable solar policy). An independent study of installation quality performed for the Rhode Island Office of Energy Resources found that 47% of small-scale solar PV systems inspected exhibited major or critical installation deficiencies.⁵

DOER should highly incentivize small projects, but recognize that these will continue to play a small role in attainment of our emissions goals for 2030.

As DOER is well aware, controversy surrounds policy relative to siting large solar projects. In finding a path forward, above all else, DOER must ensure that it does not create blanket policy that stalls or marginalizes appropriate large projects. We offer some general observations in this regard:

- DOER should highly incentivize large scale roof top solar, but as with small roof tops recognize that there are significant impediments beyond the reach of DOER's policy setting ability that will limit the number of such projects, such as:
 - Commercial building owners do not directly realize cost savings
 - Roof top solar panels can be an impediment to attracting tenants that need roof top space for their business.
 - There may be structural issues that preclude solar

⁵ <http://www.ripuc.org/eventsactions/docket/4892-DGBoard-CadmusStudy-Nov5-2018.pdf>

- Safety concerns. (Walmart is suing Tesla, contending that at least seven rooftop fires between 2012 and 2018 were a result of problems with solar panels installed by the company. Walmart is seeking damages from Tesla, as well as the removal of all the company's solar power systems from its stores.⁶
- DOER should highly incentivize parking lot canopy solar. With the necessary incentives canopy solar is perhaps the best prospect for a rapid ramp in large scale solar siting. This should be a policy priority for DOER:
 - Parking lots are abundant close to urban and suburban load and pose fewer interconnection issues.
 - Parking lot canopies can be behind the meter for the buildings and businesses served by a parking lot.
 - Parking lot canopies do not have the impediments associated with roof tops
 - Parking lot canopies provide a benefit to people parking their cars – shade means less over heating and the cover means protection from rain and snow.
 - The panels are off the ground and not visible.
- DOER incentives should support the financial viability of struggling Massachusetts farms by ensuring that farmers can continue to host large-scale solar generation on their lands. Massachusetts has 7,241 farms and 491,653 acres of agricultural land⁷. This is 10% of Massachusetts total land. In 2012, 31.1% of the principal farm operators were in the 55-64 age category and the 65 and over category had grown to 30 percent.⁸ Solar can provide a much needed income to help farms survive, especially to attract a new generation of farmers as the current generation ages, and as farmers look for alternatives other than selling land for housing or commercial development.
- As DOER is aware, clearing forested land for ground mount solar is a contentious subject. In addressing this topic DOER should recognize the nuanced nature of the debate and resist blanket policy that does not recognize the varied land situations. Review the siting regulations and guidelines in NJ and CT. Local control should be recognized, as should land use classifications. An example of a policy failure would be a DOER prohibition or disincentive against clear cutting for solar but no such prohibition or disincentive for housing or commercial development, especially in a municipality that would prefer solar over other development. Another policy failure would be a weak subcontractor that was poorly targeted or insufficient to prevent clear cutting endangered habitat. DOER should restrict solar from lands protected by legislative or administrative designations that preclude major development (e.g. areas of critical environmental concern, parks, critical habitat, etc.), lands with high incidence of special status species, buffers and wildlife corridors.
- DOER should add an incentive for floating PV systems deployed at wastewater treatment plants and other locations where habitat values would not be degraded.

DOER should add an incentive for projects incorporating modules with manufacturer take-back/recycling commitments. On a related note, DOER should consider a potential inducement to get early adopters to repower with higher-efficiency modules while ensuring safe reuse of legacy modules.

As solar technologies rise in popularity, older units are already being decommissioned. Simply disposing of spent solar panels can contaminate soil and groundwater with lead, cadmium, and other materials that are

⁶ <https://www.nytimes.com/2019/08/20/business/walmart-tesla-lawsuit-fires.html>

⁷ <https://www.mass.gov/info-details/agricultural-resources-facts-and-statistics>

⁸ <https://ag.umass.edu/resources/massachusetts-agricultural-data/demographics-of-farm-operators/demographics-of-farm>

hazardous to human and environmental health. Our ability to collect and recycle old solar panels has not kept pace with the industry's growth and will leave local governments wondering how to safely manage all this toxic waste. Solar panel recyclers are few.

We need an incentive for panels that have an extended producer responsibility (EPR) requiring the solar panel producer to provide free collection and refurbishment or recycling of spent solar panels. The state of Washington passed the U.S.'s first solar panel EPR program in 2017.

Summary.

The urgent need for solar development does not allow DOER to slow development down with hesitant steps, but rather requires embracing the strengths of the SMART program and making long-term solar development a major asset for Massachusetts fighting the climate crisis, for the economic benefit for all residents no matter their income level, and for new economic development and jobs as we transition off of fossil fuels.

Sincerely,

Deb Pasternak
Chapter Director
Massachusetts Sierra Club

Paul Dale
Energy Committee Chair
Massachusetts Sierra Club