



June 1, 2020

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SMART Review Public Comments

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Dear Secretary Theoharides and Commissioner Woodcock:

The Sierra Club Massachusetts Chapter welcomes the opportunity to offer comments on the proposed 2020 version of the SMART Program Regulations. The Chapter has 130,000 members and supporters throughout the Commonwealth, and the national Sierra Club is one of the largest and most respected environmental organizations in the country.

With some exceptions the proposed regulations are an improvement over the previous version. There are over 26 changes, in many areas, including an increase in the amount of solar energy production eligible for SMART, low income and community solar encouragements, a key role for energy storage, support of canopy and floating solar units, increasing the Category 2 and 3 subtractors, and more.

That being said, we are disappointed that the improvements do not go as far as they need to. In particular we want to comment on:

- **Increasing the SMART program to 4800 MW or more**
- **Significant improvements for low income solar**
- **Nuanced handling of land use issues**

Increase to 4800+MW.

A significant disappointment is that the coverage expands from 1600 MW only to 3200 MW rather than 4800 MW or more. The SMART program should be creating the solar pathway necessary for the Commonwealth to achieve at least an 80% reduction in GHG by 2050. A critical element of this is a stable program that allows developers the certainty they need to pursue the multi-year lead times associated with financing, permitting, build-out, interconnection, stable hiring and training. DOER is aware that thousands of solar jobs have been lost in recent years due to the “on again, off again” nature of SMART. This must be addressed by expanding the program. Moreover the COVID-19 pandemic has contributed to a loss of over half the 8200 solar jobs in the state at the beginning of the year.

The Brattle Group report¹, “Achieving 80% GHG Reduction in New England by 2050” shows what 80% emissions reduction means in practice for New England. The conclusion chart is shown below as Figure 1. We call your attention to the two highlights we have added. Arrow 1 shows that New England as a whole needs to add 6,600MW/yr of solar. Arrow 2 shows that the steepest ramp up needs to start before 2030. In particular the report indicates that solar needs to increase 21% per year between 2019 and 2030 in New England as shown in Figure 2. In seeking to provide a solar pathway for the state, DOER must be cognizant of the need for large percentage increases to begin immediately and provide the policies to make this happen.

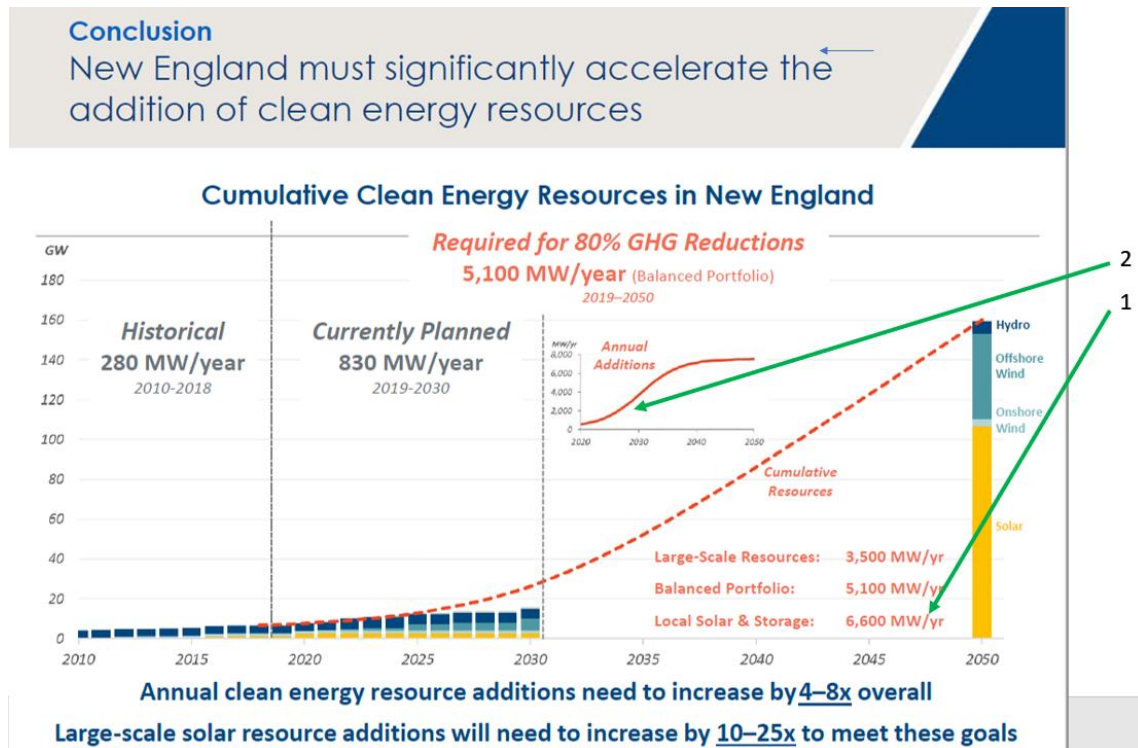
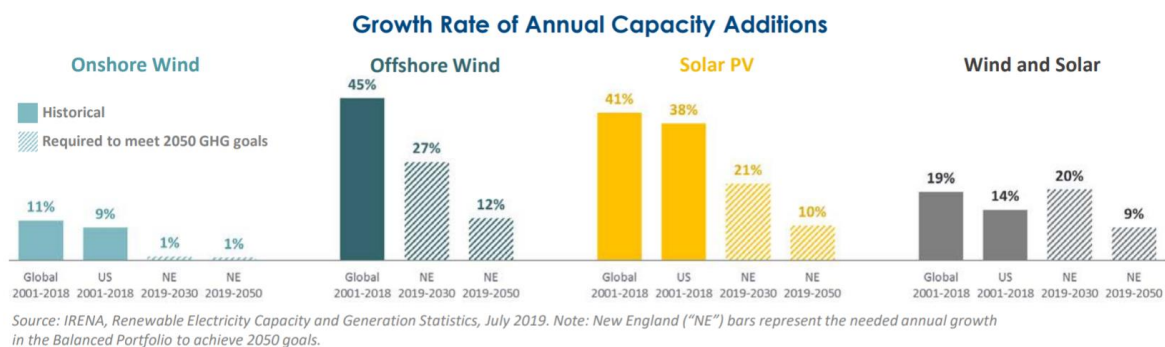


Figure 1



Brattle

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Figure 2

¹https://brattlefiles.blob.core.windows.net/files/17233_achieving_80_percent_ghg_reduction_in_new_england_by_2050_september_2019.pdf

To establish a baseline for Massachusetts, please remember that as of December 2019, “Massachusetts had surpassed its aggressive target of 1600 MW of solar power installed for 2020” with 2572MW installed². Under the SMART program specifically, as of May 20, 2020, the Total Allocated Capacity of Large + Small Projects is 1007MW³. Figure 3 shows with 21% per year increases and a SMART program size as proposed of 3200 MW, the program will reach its limit in Q1 2023 (see the red line). This is far too soon for the developers to overcome the financing, interconnection and stable hiring hurdles noted above before the SMART program again comes to a halt. If instead the program size is increased to 4800 MW, an additional 3200 MW, then the SMART program would continue through Q3 2024 assuming 21% increases.

Needed Increases in Solar 2019-2030				
Year	21% increase amount	Total installed MW	Cumulative addition over 2019	Total additions using SMART as the baseline
2019		2572		1007
2020	540	3112	540	1547
2021	654	3766	1194	2201
2022	791	4556	1984	2991
2023	957	5513	2941	3948
2024	1158	6671	4099	5106
2025	1401	8072	5500	6507
2026	1695	9767	7195	8202
2027	2051	11818	9246	10253
2028	2482	14300	11728	12735
2029	3003	17303	14731	15738
2030	3634	20937	18365	19372

Figure 3

Low Income Solar.

We appreciate the improvement that now any household living in a Low Income Eligible Area can take advantage of SMART; they don’t necessarily need to qualify one individual household at a time, and that 5% of each capacity block needs to be low-income solar. But this is not enough.

Equality must be a core tenant of our plans for an economic recovery from the COVID-19 pandemic.

COVID-19 has put a spotlight on the extensive economic inequality that exists as well as directly impacting the health of marginalized communities most. These communities must be central in a strategy of “building back better”. Making the necessary policy changes can result in a large increase in solar employment in the state (jobs) and reduce electricity cost for our most needy population. Just 3% of the capacity applied for in the program (just 193 of more than 5,600 projects) have been in a low-income category.)

Eliminate 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 Massachusetts policy so that contracts and solar credit sales are no longer needed

² <https://www.mass.gov/info-details/renewable-energy-snapshot#installed-solar-capacity-in-massachusetts->

³ <https://masmartsolareversource.powerclerk.com/MvcAccount/Login>

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 consumer protection concerns. One solution is allowing solar credits to appear directly on utility bills.

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.

Rooftop solar.

As discussed in the report by the Attorney General's report, "COVID-19's Unequal Effects in Massachusetts"⁴, not enough has been done to prioritize rooftop solar energy in low income and community solar efforts, where population is often dense and rooftops are the main space available for solar.

Land Use Issues.

DOER must not operate under the assumption that the rapid year-over-year growth in solar required to meet any reasonable 2030 emissions target that puts the Commonwealth on a path to 80% or more emissions reductions in 2050 can be obtained through rooftops, canopies and other smaller scale projects. Large projects are essential to these goals. Thus land use issues must be addressed head on in a way that allows attainment of these goals and protects lands with special values.

Large projects are essential.

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

Modeling supports this empirical result. Referring to Figure 1, the Brattle report concludes that large amounts of solar capacity (relative to wind) is required because with increased electrification peak usage will be in the winter when solar output is reduced, hence their concluding statement, "Large-scale solar resource additions will need to increase 10-25x to meet these goals" [compared to 4-8x additions overall].

The NREL report, "Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment"⁵ is sometimes cited to support a thesis that all our solar needs could be met with rooftop solar. However, as the report itself points out⁶,

"Figure 1 [see below] illustrates the relationship between technical potential and three other types of potential often used to discuss energy technologies: resource potential, economic potential, and market potential. Resource potential, the largest of the three types, is the entire amount of energy in a particular form for the region under consideration. Technical potential, which is the topic of this report, estimates how much of that total resource could actually be captured, given physically available area and technology performance without considering economics. Economic potential is then the quantity of the possible generation that would result in a positive return on the investment of constructing the systems (Brown et al. 2015). Lastly, market potential estimates the quantity of

⁴ <https://www.mass.gov/doc/covid-19s-unequal-effects-in-massachusetts/download> Office of the Attorney General, Boston, MA (2020)

⁵ <https://www.nrel.gov/docs/fy16osti/65298.pdf>

⁶ Ibid, page 1

energy expected to be generated from the deployment of a technology into the market, considering the impact of factors such as policies, competition with other technologies, and the rate of adoption on the actual deployment of a technology.”

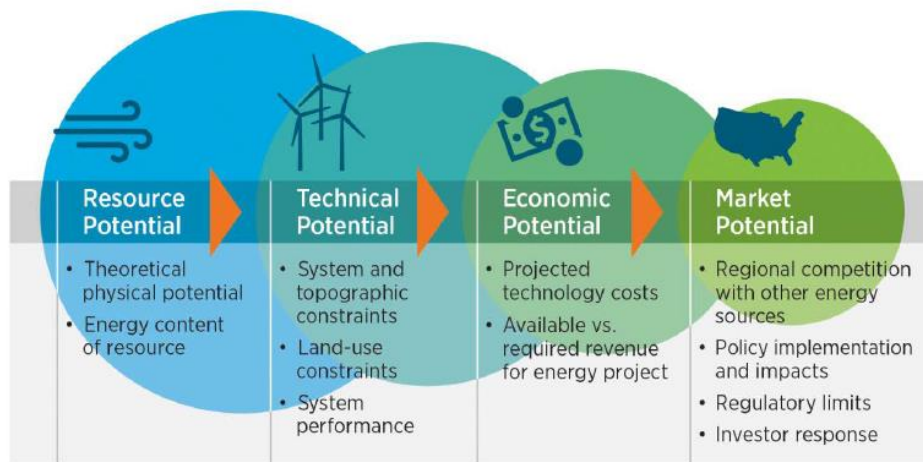


Figure 1. Types of renewable energy potentials

Source: Brown et al. 2015

The report is theoretical, developed from LIDAR data⁷ without respect to the barriers to achieving a large overall solar contribution from small projects, especially within the next few critical years before 2030:

- 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.
- 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.
- Residential and commercial buildings may have structural issues that preclude solar or require expensive re-roofing.
- Developers would require a large labor force trained to do quality work and to interact with a multitude of customers.
- Municipalities would need to handle a multitude of permits and inspections (and have 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.⁸

⁷ Light Detection and Ranging (LIDAR) is a technology similar to RADAR that can be used to create high-resolution digital elevation models (DEMs) with vertical accuracy as good as 10 cm. LIDAR equipment, which includes a laser scanner, a Global Positioning System (GPS), and an Inertial Navigation System (INS), is generally mounted on a small aircraft. https://www.usgs.gov/faqs/what-lidar-data-and-where-can-i-download-it?qt-news_science_products=0#qt-news_science_products

⁸ <http://www.ripuc.org/eventsactions/docket/4892-DGBoard-CadmusStudy-Nov5-2018.pdf>

- Utilities would need to be respond to a large number of interconnection requests and would similarly need expanded staff and would seek cost recovery for this.

DOER should highly incentivize small projects, especially for low income, but recognize that these will play a minority role in attainment of emissions goals for 2030. The Brattle Group’s assessment of rooftop and large-scale PV potential for Massachusetts indicates the importance of large scale projects. See Figure 4.

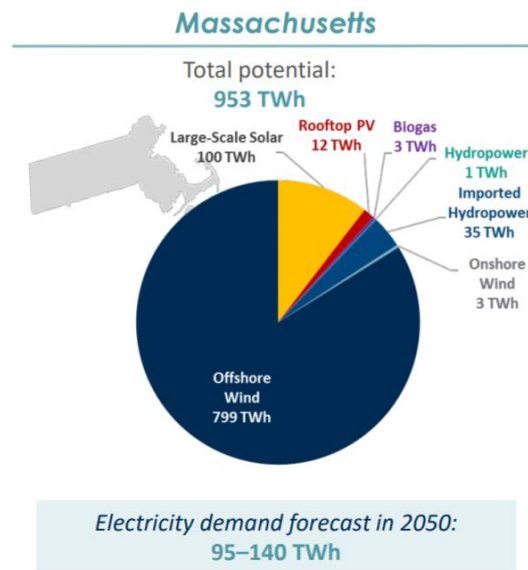


Figure 4

Balancing Land Use.

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. Rather than thwarting solar development with blanket restrictions, please review the proactive approach to siting adopted by New York on April 2, 2020. We have included information below. Whatever approach is adopted,

- Local and public input should be recognized. For each project, municipalities and community intervenors should have access, as appropriate, to funds that will assist them in reviewing the project and aid them in providing comments on the project’s compliance with local laws with respect to the environment, public health and safety.
- Mechanisms for exceptions and appeals should be available.
- Endangered and threatened species ecosystems must be protected by prioritizing avoidance and mitigation of impacts on a regional scale, including buffers and wildlife corridors.

A Land Use Model – NY Accelerated Renewable Energy Growth and Community Benefit Act (the “Act”)

The primary result of the Act is an overhaul of New York’s large-scale renewable siting process. “This legislation was needed because environmental protection and climate action go hand in glove with growing a strong economy. New renewable projects will help meet the State’s clean energy and climate goals, improve

air quality and public health, drive economic activity and create family-sustaining jobs for New Yorkers”.⁹ The Act has widespread support with business, real estate, labor, environmental and clean energy groups¹⁰.

“The Act contains three major provisions—a new, dedicated office and streamlined process for siting renewable energy projects over 25 MW, a program to identify “build ready” sites that are good candidates for renewable energy projects, and a program to accelerate the development of necessary transmission and distribution upgrades. (Only renewable energy siting is discussed here; transmission upgrades are outside the scope of SMART.)

- **Office of Renewable Energy Permitting¹¹**

- Renewable energy projects greater than 25 MW will be able to go through a streamlined permitting process that will last no longer than one year from application to approval; projects on certain disturbed or industrial sites will be able to complete the process in 6 months, and current projects going through the [existing] Article 10 process ... can opt-in to the new process.
- Establish regulations and uniform standards that encompass the environmental impacts common to large, renewable energy projects, and identify mitigation measures to address those impacts.
- Require that uniform and site-specific standards and conditions must achieve a net conservation benefit to any impacted endangered and threatened species.
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- Authorize [the use of] funds from projects permitted through the new siting office to implement an endangered and threatened species mitigation bank fund.
- Develop draft permits for public comment and local community input and ensure that complete applications are acted upon within one year, except in the case of certain former commercial and industrial sites, which will be reviewed within six months.
- Projects must adhere to all local laws unless the laws are found to be unreasonably burdensome.
- For each project, municipalities and community intervenors will have access, as appropriate, to funds that will assist them in reviewing the project and aid them in providing comments to advise the Siting Office on the project’s compliance with local laws with respect to the environment, public health and safety.
- Fees for off-site mitigation will be imposed if environmental impacts are not completely addressed by general and site-specific permit conditions.

- **Clean Energy Resources Development and Incentives Program¹²**

- The NYS Energy Research and Development Authority (NYSERDA) will work with the Empire State Development Corp., the Department of Environmental Conservation and other agencies to

⁹ <https://www.solarpowerworldonline.com/2020/04/coalition-of-stakeholders-applaud-new-york-renewable-siting-transmission-reform/>

¹⁰ <https://nylcv.org/press-item/groups-applaud-renewable-siting-reform/>

¹¹ These bullets are taken from two sources: <https://www.nrdc.org/experts/cullen-howe/renewable-energy-gets-major-boost-new-york-state-budget> and <https://www.nyserda.ny.gov/About/Newsroom/2020-Announcements/2020-04-03-NEW-YORK-STATE-ANNOUNCES-PASSAGE-OF-ACCELERATED-RENEWABLE-ENERGY-GROWTH-AND-COMMUNITY-BENEFIT-ACT-AS-PART-OF-2020-2021-ENACTED-STATE-BUDGET>

¹² See previous footnote.

identify “build ready” sites that are good candidates for renewable projects and will open these sites up for developers to bid on.

- Once these sites are fully permitted and developed, NYSERDA will competitively auction them to private developers to construct and operate renewable energy projects at these sites.
- In order to ensure that renewable energy projects deliver benefits to the local communities where they are built, the Act establishes several programs. First, NYSERDA will develop a Host Community Benefit Program as part of its build-ready initiative, which will offer property owners and communities tangible benefits and incentives for hosting renewable energy facilities.
- The Act also creates a new program that will be established by the Public Service Commission, which will provide utility bill discounts or other environmental benefits or compensation for the benefit of residents of host communities.
- Finally, in order for communities to participate in the new siting process, NYSERDA will administer a local intervenor fund for the benefit of local agencies and community intervenors.

The full text is at <https://nyassembly.gov/2020budget/2020budget/A9508b.pdf> in Part JJJ starting on page 102.

Summary.

The proposed regulations are better than the regulations they will replace, but they fall considerably short of where they need to be. We urge you to address these shortcomings, especially in terms of expanding coverage to 4800+ MW, removing roadblocks to low-income and community-based projects, and providing a proactive, balanced approach to land use so that Massachusetts can resume the rightful place it once occupied as a solar leader in our Nation.

Sincerely,

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