

Comments on Solar Canopies

Respectfully submitted by Michael DeChiara, Shutesbury

Overall, I am very supportive of the deployment of solar canopies in Massachusetts. Given the findings of DOER's Technical Potential of Solar Siting report, canopies are a way of expanding deployment of solar on the built environment. They are also an good way of deploying distributed solar, which I think provides greater resiliency and better distributes the footprint of solar throughout the Commonwealth. The following comments should be understood to be with this general support for canopies in mind.

1. Solar exemption as a barrier

I believe that unless addressed through legislation, the 1985 solar exemption (sometimes referred to as the Dover Amendment), Ch40A Sec3 para 9 could be a barrier to canopy deployment. The 2024 Clean Energy Law explicitly stated that municipalities that followed DOER regulations regarding siting and permitting for small clean energy facilities (generating and storage) would be considered in compliance with the solar exemption. DOER should get legal review to determine if subsequent canopy regulation can fall under this umbrella or whether new legislation making the same allowances explicit for canopy projects is required. It is not sufficient for DOER to simply develop a model canopy bylaw for municipalities to use; similar to the 2014 DOER model solar bylaw. As we have seen with ground mount solar, municipalities can and do get sued by developers claiming that a bylaw creates unreasonable regulation and therefore contrary to the solar exemption. Whatever DOER does, it needs to be confident that municipalities are protected from being sued if it seeks broad adoption.

2. Energy Storage

Lithium-ion battery storage is increasingly understood (I hope) to be problematic by DOER, even though the SMART 2.0 regulations require solar generation facilities to be paired with energy storage systems (ESS). It is well documented that ESS can catch fire and spread through thermal runaway. The nationally recognized best practice by the National Fire Protection Association is to let these fires burn themselves out since water does not extinguish them. Water can only help contain the heat to minimize thermal runaway. While one would assume that ESS installations would be smaller for canopies than for ground mount solar, the fire risk and subsequent dangers remain. These are particularly problematic in areas/communities without adequate water supply; many small Central and Western Mass towns for example do not have municipal water supply so there is literally not enough water to contain a lithium ion fire. This means that DOER in its canopy guidance needs to apply the same safety and siting vigilance as it hopefully will do in the regular small clean energy facility regulations. Finally, siting of canopies is particularly challenging given the proximity to certain types of the built environment like schools, town halls, etc. A fire at an ESS associated with a canopy near these could create a fire at the building so guidance for safety is paramount.

3. Proximity to Interconnection

While canopies are smaller than ground mount solar installations, the issue of proximity to interconnection should not prevail over other siting priorities, similar to what I've recommended for ground mount. This can likely be facilitated by having canopies prioritized for the built environment but it is worth keeping in mind that siting for safety and appropriateness within a community should prevail over proximity to interconnection.

4. Municipal Ownership

The Commonwealth can achieve relatively rapid deployment of solar if it partners with the 351 municipalities in the state. Speaking as a municipal official, I can confidentially state that all municipalities would gladly install canopies if they were able to. This would mean funding mechanisms that work for resource constrained municipal government and procedures that were not onerous. While certainly private deployment can occur using the SMART program, intentional efforts should be made to enable municipal ownership of canopies (with likely private vendor-based operations). As with the state-funded broadband solutions through the Mass. Broadband Institute investments in Western Mass., muni-owned canopies can create a rare source of desperately needed revenue. While not directly reducing consumer rates, town revenues enables stabilization of tax rates for residents.

Funding in this scenario can be a grant program. However there are two important things that need to occur. First, unlike the Municipal Vulnerability Preparedness program, a Canopy grant program should allow municipal applicants to receive funding to pay for feasibility study that results in technical and financial specifications. In some situations, munis might opt to pay for these projects on their own, once the specifications are known. The second important element is to make the grant program non-competitive – we want rapid and broad deployment so all applicants should be deserving. If since resources are always limited, the grant program should at least be a level playing field – often small, volunteer-run, low capacity municipalities do not apply for state grants because the process is too heavy a lift. If as considered, there is a loan program for municipalities to develop canopies, it is preferable that these be zero percent loans.

5. Public Entity

Finally, the working group's recommendations include a preference for the SMART public entity status to be used. This is a TERRIBLE idea. Public entity status is a huge loophole that has been used by solar developers to scam the SMART process, flying in the face of what I assume was good intent by DOER. Public entity status under SMART 2.0 allowed projects to jump to the front of the line thereby getting higher rates and to apply for SMART subsidy before having all necessary permits in place. I have advocated for the Public Entity option to be removed in SMART 3.0. If it survives, it should certainly not be available for canopy projects.

6. Standard Permit

If a common permit is recommended, this should be coordinated with the DOER Siting and Permitting Division which is working on common application for small clean energy facilities.

7. Reform of Easement Status Quo

It is my understanding that utilities are the deciding entity in determining whether electric lines can cross over easements like roadways. Since utilities tend to favor centralized power generation, it is conceivable that if given the choice, they would like to minimize deployment of canopies that offer distributed power generation. In all likelihood this will require contentious legislative fix but this issue, if my understanding is correct, will need to be addressed if the Commonwealth wants municipalities and private entities to deploy canopies more broadly throughout communities. This is also highly relevant to developing microgrids in the Commonwealth – something I support and which can create greater resiliency for communities.

8. Mandate for canopies on new construction

The Working Group recommends a requirement for canopies to be built on new parking lots and EV charging stations. I strongly agree. I would also suggest this could be extended to other types of large scale commercial developments.

I would also suggest a targeted subsidy or tax incentive to encourage the building of canopies on existing parking lots. This should be designed to counter the hesitancy related to these retrofit projects due to increase costs.

9. Technical Potential for Solar Approach

Just as this report identified the status of every parcel in the state, a recommended addendum could identify and rate the attractiveness of canopy installs, thereby removing the need to find good locations and eliminating known bad locations.

10. Canopies on the Mass Pike and other roadways

This is my dream scenario. One of the primary challenges of deploying solar is the need for land to install solar on. Canopies have a more manageable footprint than ground mount solar. A starting point should be state or publicly owned land that is associated with the built environment or similarly compromised environmentally. My dream would be to have the entire length of the Mass Pike median strip be filled with canopies (hopefully this is not owned by the feds which would likely deny access). If do-able, this would be 138 miles of possible canopies. It would require engineering to ensure driver safety and maintenance access but if successful would provide an ongoing public education opportunity and substantial generation. This could be replicated on some state highways or even major local roads.