From:	Lilly Lombard
To:	SMART, DOER (ENE)
Subject:	400 MW Review Public Comments
Date:	Thursday, September 26, 2019 8:51:12 PM

September 27, 2019

To the Department of Energy Resources,

As a resident of Northampton, MA and chair of its Public Shade Tree Commission who helped the City strengthen its bylaws pertaining to large-scale solar development in the face of recent, aggressive pursuit of such development, I spent over one hundred hours researching this topic and speaking with affected MA communities and experts.

The science is clear--we are facing a climate emergency, and one important response is rapid transition to clean energy. However, sloppy market-dominated "emergency responses" such as incentivizing large-scale solar development on thousands of forested and farmed acres ironically now threaten the natural systems we rely on to reduce emissions, soften the effects of violent weather, and provide habitat for species that support our web of life. Without proper tracking of this land conversion, we have no idea if we are on balance improving our situation, or playing a dangerous shell game leading to regretted, unintended ecologic, climate, and public health consequences.

DOER should apply careful analysis when revising SMART regulations and we track project siting details, which it has failed to do to date. When asked during the recent stakeholder meeting in Fitchburg, the DOER representative could not justify how the agency arrived at the new subtractors it is proposing, nor why adders to incentivize preferred siting were not increased. This response was deeply disconcerting.

One expert whom I found especially knowledgeable of siting concerns in my months of research was Zara Dowling, Research Fellow at the UMass Clean Energy Extension Service, who over the past year, helped educate and advise MA planning and conservation commissions as they faced unprecedented numbers of solar development applications.

I have read the comments Ms. Dowling is submitting to DOER regarding the expansion of the SMART program and find them uniformly consistent with my concerns and recommendations. Therefore, I submit as my testimony Ms. Dowling's comments pasted below.

Thank you,

Lilly Lombard
39 Munroe St, Northampton, MA

I am writing to express my deep concern regarding the proposed expansion of the

“SMART” solar incentive program, as described in the 400 MW review straw proposal. As the chair of my town Energy Committee and a member of my town Conservation Commission, I am strongly supportive of solar development within the state, to combat climate change and achieve our greenhouse gas emissions reduction goals. However, the current SMART program has serious flaws in its structure and implementation, which are inadequately addressed in – and in several cases would be exacerbated by – the proposed changes.

Specifically:

1. **The proposed expansion perpetuates the program’s inability to respond to changing market conditions.** If the SMART program is to be expanded at all beyond the initial 1600 MW, the full 800 MW proposed expansion MUST be required to comply with the new incentive structure.

2. **Important stakeholder groups were excluded from development of the SMART regulation and proposed updates, and stakeholder feedback was ignored in the development process.** Before proceeding with an expanded incentive program, a permanent advisory group should be established to address continuing issues with stakeholder engagement.

3. **There has been a void of information regarding how solar development is impacting land of conservation importance within the state.** As a basic component of any solar program, DOER should track and provide to the public data and analysis regarding the environmental and agricultural impacts of solar development within Massachusetts.

4. **The proposed changes fail to provide regulatory certainty, or foster long-term sustainability, of the solar industry within the state.** Long-term planning for all solar PV market sectors, as well as greenhouse gas emissions targets, should guide capacity expansion – not a misguided “emergency” effort to relieve market pressure.

5. **The SMART program has promoted widespread development of undeveloped land.** The proposed changes are entirely inadequate to address the impacts of continued solar development on land of conservation importance within the state; significant structural changes to the program are needed.

6. **The SMART program has placed immense pressure on municipal governments in rural communities, without providing necessary support services.** The proposed changes would exacerbate the negative impacts this program has had on small western and central Massachusetts communities. Additional programmatic changes are required to support small towns and mitigate a SMART-induced backlash against solar development.

The SMART program in its current iteration is violating both the letter and spirit of its original enacting legislation, which called for development of 1600 MW of solar PV through a program that supported “diverse installation types that provide unique benefits” and was “adaptable to changing market conditions.” Moving forward, our state can develop a truly adaptable and diverse solar PV program, but it will require a long-term planning approach, and greater engagement with a diverse group of stakeholders. Massachusetts is a leader in renewable energy development and

environmental protection – let's take the time to do solar development right - and provide an example to other states of how it should be done!

The following comments expand upon the issues outlined above, through a discussion of specific proposed changes, and associated concerns and recommendations.

SPECIFIC COMMENTS REGARDING PROPOSED CHANGES

1. If the SMART program is to be expanded at all beyond the initial 1600 MW, the full 800 MW proposed expansion MUST be required to comply with the <u>new</u> incentive structure.

Slide 9 - DOER states that projects with all required application documentation received as of the filing date of the regulation will be exempt from new land use requirements.
Under this proposal, DOER can expect to receive a flood of new projects filed quickly to avoid complying with the updated incentive structure - including the increased Greenfield subtractor - since developers of large projects will have a strong financial incentive to file before the changes take effect. As proposed, this could mean the full 640 MW available for large-scale solar under the expansion (assuming a 20% set-aside for small projects) would be developed under the original incentive structure. The initial 400 MW review findings were supposed to apply to the remaining 1200 MW of solar PV capacity developed under SMART, but they were not, due to the rapid influx of applications to the SMART program. Under the proposed expansion, there is no measure to prevent a full 2400 MW of solar from being developed under the original regulation and incentive values. This does not reflect a program that is adaptable to changing market conditions.

RECOMMENDATION: All applications received from the first release of 400 MW straw proposal (9/5/2019) should be required to comply with the new regulation.

2. Before proceeding with an expanded incentive program, a permanent advisory group is required to address major issues with stakeholder engagement.

The SMART program has suffered tremendously from a lack of engagement with stakeholders and incorporation of stakeholder input into the drafting of the regulation. This problem has continued through the 400 MW review process.

- There has been little transparency about who was invited to stakeholder meetings, no publicly-advertised opportunity for organizations or individuals to request being included in stakeholder meetings, and no explanation of how stakeholder input has been incorporated into the final regulation.

- Stakeholder input from the environmental community was entirely disregarded – extensive land use guidelines developed for the initial SMART straw proposal

based on the input of conservation stakeholders were completely removed from the final regulation, without any further discussions with conservation groups.

- Important constituencies and stakeholders have never been included in stakeholder meetings – this list includes the UMass agricultural extension teams, who were actually written into the ASTGU portion of the regulation, without ever being consulted or informed. This also includes other entities representing farmers, (for example, the New England Vegetable and Berry Growers Association, the Cape Cod Cranberry Growers Association, Community Involved in Sustaining Agriculture, Berkshire Grown), regional planning authorities, organizations that represent municipalities (for example, the Massachusetts Municipal Association, Massachusetts Association of Conservation Commissions), municipal board members, and MassWildlife.

- Due to the lack of engagement with these important stakeholders, the regulation has included serious mis-steps, including the municipal bylaw loophole regarding the Greenfield subtractor.

- These stakeholders continue to be left out of the stakeholder engagement process as part of the 400 MW review.

- The public hearing and public comment process for the current 400 MW review do not appear to have been designed to encourage public input. Public hearings were announced less than 2 weeks before they occurred. They were held during business hours, limiting who could attend. The straw proposal presentation was not made available before the first meeting so that the public could review it, and come to the meeting prepared with questions or concerns. Further, a significant portion of the presentation regarding proposed changes uses vague or difficult to interpret language.

RECOMMENDATION: Given DOER's failure to adequately solicit and incorporate stakeholder feedback, there is a need for a <u>permanent solar advisory group</u> that provides feedback to DOER regarding solar siting, solar incentive structures, the solar energy market, and related topics. This group should include a diverse range of stakeholders – including solar developers and solar trade groups, financiers, environmental conservation organizations, MassWildlife, agricultural organizations, the Massachusetts Department of Agricultural Resources, regional planning authorities, organizations that represent municipal boards (e.g MACC, MMA), and low income/social justice organizations.

3. As a basic component of any solar program, DOER should collect, track, and

provide to the public data and analysis regarding the environmental and agricultural impacts of solar development within the state.

It has also been difficult to track and substantively comment upon the effects of solar development on ecological and agricultural resources, due to a lack of transparency about where solar projects are being sited. DOER has indicated that it has conducted mapping and analysis of land use relative to solar development, but the maps, analysis, or even underlying data, have not been released to the public. THIS SHOULD HAVE BEEN PROVIDED AS PART OF THE 400 MW REVIEW, AND MADE AVAILABLE TO THE PUBLIC FOR COMMENT AS PART OF THE PUBLIC COMMENT PERIOD.

RECOMMENDATIONS:

- **DOER should provide 30 days for public comment FOLLOWING RELEASE of its land-use analysis of solar development and mapping of solar arrays.**
- **DOER should provide a spreadsheet, including latitude/longitude or street addresses, for all large solar arrays (>500 kW) built under SMART and SREC programs, so that researchers and non-profit organizations can conduct their own analyses. This data should also be made available as a GIS layer through OLIVER.**
- **These data sources should be updated regularly – at least monthly.**
- **Moving forward, DOER should require basic land use information from STGU applicants for all >500 kW (or Category 2 and 3) projects. This should include an attestation from the land owner identifying 1) current land use, 2) any use of the property for commercial agriculture within the past 5 years, 3) any forest clearing over 1 acre that has occurred on the property in the past five years, and 4) the amount of acreage of forest, if any, anticipated to be cleared as part of the solar development.**

4. Any expansion of the solar program should be based on the need for new solar development to meet greenhouse gas emissions goals and foster a sustainable solar industry within the state. The proposed "emergency" expansion is not necessary to meet stated solar development goals, and fails to achieve the goal of relieving market pressure, or providing a stable regulatory environment to developers.

Slide 6 – DOER proposes an 800 MW expansion of the SMART program, with modest changes to the regulation.

DOER expected the initial SMART program to be rolled out over 4 years, but the program filled up in western and central Massachusetts service territories for large-scale projects in approximately four months. Meanwhile, "small" projects actually appear to be being installed at the rate anticipated by DOER, and in keeping with

initial goals: 8 MW/month x 12 months/year x 4 years =384 MW – about 25% of the SMART 1600 MW plan. This suggests the expansion is not warranted on the basis of a need for immediate new solar capacity for customers.

The current incentive structure promotes a “solar coaster” - a market rush followed by long periods of no development – detrimental to both solar developers and municipal decision-makers, who are pressured to make quick decisions regarding solar projects.

RECOMMENDATION: Rather than being based on an emergency response to alleviate market pressure, the expansion of solar incentive programs now, and into the future, should be based on how much solar can be successfully integrated into the grid on an annual basis, and how much is warranted to meet greenhouse gas emission reduction goals. Rather than propose an 800 MW expansion - which appears to be an arbitrary figure, exactly half of the existing program - additions to solar incentive programs should be based on state energy goals.

For example, the state’s current electricity demand is 54,000,000 MWh. If we anticipate that 1/3 of the state’s electricity needs by 2050 should be met by solar, this would require at least 18,000,000 MWh of solar generation, or 15,000 MW of solar capacity. Given that approximately 2,500 MW have been installed, an additional 12,500 MW would be needed. To develop this capacity over a period of 30 years (i.e. 2020-2050) would require an annual addition of 420 MW of solar capacity.

[These calculations are provided as an example – I recognize that electricity demand may be expected to increase, despite energy efficiency measures, due to the expected expansion of electric transportation infrastructure. However, recommended capacity expansions should have some justification.]

Slide 7 – DOER suggests the proposed expansion will provide 7 years of incentives for large projects and 5.5 years for small projects.
DOER provides estimates of how long an 800 MW expansion would last, based on the rate of new applications received into the SMART program after the first week. It is not reasonable to expect that applications received after the first week are representative of the “going” rate, since service territories in western and central Massachusetts (National Grid, Eversource West, Unitil) were almost entirely filled up in the first week, development rates were slower in eastern Massachusetts and on Nantucket, and it is to be expected that development rates will increase again if western and central locations become available.

Even if DOER’s assumptions are taken at face value (47 MW/month for large projects, 8 MW/month for small projects), the math doesn’t add up to suggest that the proposed expansion will provide anywhere near the time DOER suggests it will:

82 months at 47 MW/month = 3,854 MW????
66 months at 8 MW/month = 528 MW
TOTAL = 4,382 MW???

Instead, by DOER’s own report, remaining and proposed capacity for large projects would be expected to fill up in less than two years (370 MW remaining, once wait-

listed projects have been approved, plus 800 MW* 80%=640 MW, totals 1,010 MW. 1010 MW divided by 47 MW/month = 21.5 months).

RECOMMENDATION: DOER should clarify how it expects this expansion will in fact last 7 years. A better approach would be to establish a new program that provides a managed rate of solar expansion on an <u>annual</u> basis, with program reviews scheduled every 1-2 years.

Slide 2 – DOER numbers show that in terms of total installations, both number of projects AND capacity, small projects are outcompeting large projects.
14 MW of 939 MW of large projects have been built = only 1.5%
20 MW of 78 MW of small projects have been built = 26%
Small projects are supporting solar installers and actual expansion of solar capacity.

Slide 5 -DOER notes small and mid-size commercial applications compete for capacity with large ground mounted applications.
DOER notes that mid-size commercial applications compete for capacity with large, ground-mounted projects, but provides no shelter or set-aside for midsize projects to be developed. Meanwhile, many solar developers currently developing large projects in Massachusetts are national or international entities. There is an endless thirst from these markets, if the incentives are sufficiently lucrative – it may not be possible to ever fully "alleviate market pressure" for large projects. The focus for Massachusetts should be on supporting its homegrown small to medium-scale solar industry, with large projects used to round out solar PV capacity expansion goals.

RECOMMENDATIONS:

- **A set-aside should be provided for projects of 25 kW to 250 kW (or include multiple categories between 25 and 500 kW), so that small to medium-scale projects are not subject to the same pressures as larger developments, and so that midsize consumers, such as public schools and small businesses, are not shut out of the solar purchasing market.**

- **A program supporting a steady rate of solar capacity expansion needs to be developed to provide market stability into the future.**

5. The proposed changes are entirely inadequate to address the conservation impacts of continued solar development in the state.

Even if the state ultimately derives only 1/3 of current electricity demand from solar in Massachusetts, 15,000 MW is equivalent to about 75,000 acres of land. We need to be thoughtful about where projects are sited, and not do wide-scale clearing of forests for solar development, which is what has happened under the current iteration of the SMART program.
Given the high costs of interconnection, mounting and site infrastructure, access, and the ever-increasing demand for renewable energy, most solar projects will likely be replaced with new solar panels after the original solar panels exceed their lifespan (i.e after 20-30 years). We therefore need to think of these projects as highly long-term land uses.

Slide 6 – DOER proposes to combine Eversource East and West capacity blocks.
The reason the Eversource East territory has been slower to fill up is that there has been a land rush on undeveloped land in western and central parts of the state to develop large-scale, ground-mounted arrays. The proposed change would put yet more pressure on rural areas for large-scale, ground-mounted solar development on undeveloped land, and would discourage creative approaches to development in the built environment. Undeveloped lands in rural areas are already providing myriad valuable environmental, social, and cultural benefits, including carbon sequestration.

Slide 8 – DOER proposes to move projects with a municipal bylaw exemption from Category 1 to Category 2.
The Greenfield Subtractor failed entirely in the first iteration of SMART program – over 60% of projects that should have gotten a subtractor did not, due to this municipal zoning bylaw loophole. Most municipalities that have solar overlay districts in place put them there as a requirement under the Green Communities program, following a model bylaw designed and circulated by DOER. These bylaws and solar overlay districts were designed to regulate development of solar, not to encourage development of undeveloped land. THE MUNICIPAL SOLAR BYLAW EXEMPTION FOR THE GREENFIELD SUBTRACTOR IS WRITTEN SO BROADLY THAT IT IS IMPOSSIBLE FOR A MUNICIPALITY TO DEVELOP A BYLAW THAT MENTIONS SOLAR WITHOUT PROVIDING A GREENFIELD SUBTRACTOR EXEMPTION. The exemption includes projects sited by as of right, OR by special permit, OR for any zoning that so much as mentions solar as a potential land use. Meanwhile, towns cannot specifically ban solar through most of their zones without fears of facing litigation regarding unreasonably restricting solar development. Under DOER's proposal, we can expect that 60% of large ground-mounted projects would still only get half a disincentive - directly counter to the wishes and intentions of community members and municipal boards.

Slide 9 – DOER proposes to move projects with a public entity adder to Category 1.
Projects under the Public Entity Adder should not be moved to Category 1. There is no need to encourage development of undeveloped public land, and there is no benefit to ratepayers – the existing program has clearly shown that ground-mounted solar facilities can be developed more cheaply than they were developed under the first iteration of the SMART program. If DOER wants to encourage public projects, it should increase the Public Entity Adder, as it proposes to do. At the hearing, DOER seemed to suggest that public projects would automatically ensure more community involvement, but with many state-owned properties across the state, local communities could have little input on projects.

Slide 9 – DOER proposes to multiply the Greenfield subtractor by 5.
Based on conversations with solar developers, this figure appears to be insufficient to discourage continued widespread development of undeveloped land. For a 1 MW array, covering 5 acres, there are only 2.5 acres of solar panels, or a disincentive of $.00625/kWh – only 5-6% of the base incentive rate. It is also entirely disingenuous to describe the 2.5 acres of panels as the "acres impacted" as shown in this slide – unless DOER intends to include the full project footprint in its new calculations.

RECOMMENDATIONS

DOER should adopt the land siting criteria from the initial SMART straw proposal, as recommended by environmental conservation organizations. It should provide NO incentives for projects sited on disallowed land use types (BioMap2, Core Forest, etc.). Why are ratepayers being required to foot the bill for development of important conservation land, and why is the state encouraging such development? The pace of development of these important habitats under SMART is simply not sustainable.

- **The municipal bylaw exemption should be removed in its entirety. All projects >500 kW on undeveloped land should get the full Greenfield subtractor.**

- **DOER should adopt a "managed growth" approach, in which annual capacity targets for solar PV development are filled first with projects located on preferred sites (e.g. residential, brownfields, landfills, etc), with last priority going to projects on previously undeveloped sites.**

- **The Greenfield Subtractor needs to be much larger, if a managed growth method is not used and it is the primary means used to discourage development of undeveloped land. The proposed increase is not sufficient to address conservation issues, and if solar on undeveloped land can be developed so cheaply, it is detrimental to ratepayers to pay more than necessary for this badly-sited solar.**

- **Location-Based Adders for preferred sites (e.g canopies, brownfields, landfills) may need to be increased.**

- **DOER should apply a maximum size based on the project footprint (in acres). Due to energy storage, projects with truly massive footprints are meeting the 5 MW AC cap.**

- **For large projects, and projects in close proximity to other large arrays, developers should be required to include vegetated corridors between arrays or array sections, to ensure large developments do not further exacerbate habitat fragmentation.**

- **Eversource West and East blocks should under no circumstance be combined.**

6. **Additional planning and provisions are required to relieve the major negative**

impacts this program has had on small western and central Massachusetts communities, and mitigate a broader backlash against solar development among rural residents.

Under the SMART program, the widespread rush to develop undeveloped land has led to many small towns being inundated with solar proposals. Existing solar bylaws – established based on DOER's model bylaw – have actually encouraged development, due to the municipal zoning bylaw loophole. This loophole was a complete misunderstanding and misrepresentation of the purpose of solar overlay district and solar bylaws – which were intended to regulate solar, not encourage development of undeveloped land. Due in large part to the failure of the Greenfield subtractor – it was not applied in 60% of cases where it should have been, and was too little disincentive to development - municipal boards (often volunteer entities) have scrambled to deal with multiple large-scale solar development permitting requests demanded over short deadlines, and often exceeding their levels of experience or expertise. As a desperate response, a number of towns have implemented solar moratoriums, but these are only stop-gap measures. Meanwhile, a number of towns that have rejected solar permits on the basis of inadequate applications or failure of developers to meet bylaws are facing litigation -a cost that that small towns with small annual budgets derived primarily from residential taxpayers are in no position to support.

Slide 6 – DOER proposes to combine Eversource East and West capacity blocks.
THE PROPOSED CHANGE IS ENTIRELY INEQUITABLE – putting the burden of solar development squarely on western and central Massachusetts communities, and another round of land rushes and harried permitting processes on the backs of already over-burdened volunteer boards. These municipal stakeholders have been provided no voice in the stakeholder input process - DOER has not even consulted directly with the regional planning authorities in western Massachusetts.

RECOMMENDATIONS:

- **Before expanding the SMART program any further, DOER needs to work with its own Green Communities program, and statewide stakeholders, to develop an updated solar model bylaw that provides better protections to towns.**

- **DOER needs to explicitly solicit and incorporate feedback from municipal boards in rural western and central Massachusetts, and work with regional planning authorities to ensure municipalities have adequate time and support to implement appropriate, updated solar bylaws.**

- **DOER should provide a fund and technical support for municipalities dealing with solar-related litigation.**

- **Developers should be required to provide PILOT agreements to DOER as**

part of their application. DOER should then make these agreements publicly available on a central website. The site should include a spreadsheet summarizing basic information about the PILOT agreements (e.g. locations, project sizes, agreed payment schemes), with links to each agreement. This site should be updated monthly. These agreements are a matter of public information, but are not assembled in one location.

- **Ultimately, DOER should design a solar program that sets incentives and fills a specific capacity on an annual basis, provides a steadier rate of project applications, so that municipal boards are not inundated with permitting requests over tiny time windows.**

7. The interconnection adder/subtractor is not clearly articulated, but could be highly detrimental.

Slide 24 – DOER proposes developing an interconnection adder and subtractor. This proposal is so vague, it is impossible to comment on it substantively. Meanwhile, the effects could be strong and highly detrimental – for example, depending on the size of incentive or disincentive, it could entirely flood out the Greenfield subtractor, and encourage land rushes in certain areas, putting further pressure on small communities. High costs for interconnection already guide where projects are built on the grid. This incentive/disincentive could be a component of a future solar incentive program, but it is HIGHLY problematic to put forward such a vague proposal and suggest the public has had an adequate opportunity to comment on it. It is impossible to know how this proposal would play out, since so little information is provided.

RECOMMENDATION: This proposal should be taken off the table for this proposal.

8. MISCELLANEOUS

Slide 20 – The language here is very unclear, but because DOER talks about "residents" rather than "ratepayers," it appears that the adjusted criteria would be based merely on the community of residence of an individual ratepayer, and not on the income for that ratepayer. This means that moderate and high income individuals in relatively low income areas could benefit from low income rates for solar. This proposed change could pay lip service to economic justice - by appearing to incorporate more low income individuals -while actually subsidizing costs for medium and high income individuals who happen to live in lower income areas to get solar, or these benefits may go to the developers.

It is a bit ironic, but since incentives for low-income community-shared solar projects are higher than for standard community-shared solar projects, this incentive could actually encourage solar development in low income communities, without benefiting a single low-income individual (e.g. if low-income community-shared electricity was sold to moderate and high income residents in that community) – turning social justice on its head.

Slide 30 – DOER says its requirement for Customer Disclosure Forms for Community-Shared Solar projects would not apply to anchor tenants because they are often big companies that know how to negotiate. However, in some cases, anchor tenants could be other kinds of clients - like municipalities, which again, may be led by volunteer boards with individuals who are not familiar with negotiating solar contracts. Some anchor tenants for community-shared solar projects likely still need protecting!

Slide 26 – DOER says its "3-strikes-you're-out" Consumer Protection Policy would stop developers who violate it from submitting new applications to the program, but doesn't address applications already in the queue – there could be many applications from these developers in line already.

Thank you,

Zara Dowling
Energy Committee chair
Conservation Commission member
New Salem, MA

Lilly Lombard
413-207-5899