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Judith Judson, Commissioner
Massachusetts Department of Energy Resources
100 Cambridge Street, #1020
Boston, MA 02114

Dear Commissioner Judson:

The Massachusetts Land Trust Coalition is the state association for the approximately 150 private, charitable land conservation trusts in the Commonwealth. We appreciate the opportunity to submit comments on the proposed changes to the 400-megawatt review of the SMART program. We urge you to take all feasible steps to eliminate the current disparities that lead to a disproportionate siting of solar facilities on undeveloped lands, including the very agricultural, forest, and priority habitat lands which the Executive Office of Energy and Environmental Affairs protects through its many programs.

We are concerned about the current conversion of the Commonwealth's forests and farmland for solar development as a result of the SMART and SREC solar programs. The existing program incentives for siting solar facilities on developed land and disincentives for siting them on undeveloped land are simply inadequate to discourage the ongoing conversion of agriculture and forest land while parking lots, rooftops and other developed impervious surfaces remain available. The magnitude of the disparity has recently been dramatically illustrated by a study released by Harvard Forest, coincidentally released this month, which found that seventy-seven (77%) percent of photovoltaic (PV) development in Franklin, Hampshire, & Hampden counties are constructed on undeveloped land. (Johnson, E., Hall, B., Powers, M., Therien, A., & Foster, D (2019). The siting and impact of photovoltaic systems in Franklin, Hampshire, & Hampden counties: A preliminary study. Harvard Forest, Harvard University, Plymouth State University, and Westfield State University). Although the study has not been peer-reviewed, this careful and thorough analysis of the impacts of solar growth in the Pioneer Valley illustrates the importance of evaluating the unintended consequences that statewide incentive policies may have on natural resources. With permission of the authors, I attach a copy of the study to our comments.

In addition to the findings by Harvard Forest we have learned that based on available data (DOER, Clark University, Harvard Forest), over 6,000 acres of forests and farmlands have been converted to large commercial/industrial ground mounted solar arrays over the past five years in Massachusetts. This is approximately 25% of the total land development/conversion footprint statewide for the last five years. That one-quarter of forest & farmland conversion in the Commonwealth in the last five years has been related to solar arrays should be a wake-up call to change the incentives.



We also recommend that all solar applications received from the first release of the SMART 400 KW straw proposal recommendations (9/5/2019) be required to comply with the new land use regulations.

We are encouraged that DOER proposes to increase the Greenfield Subtractor x 5 but believe that the Greenfield Subtractor needs to be much larger than that to truly discourage solar development on undeveloped land. Without an accompanying analysis or forecast of probable land use impacts, it is unclear whether increasing the Greenfield Subtractor x 5 will be enough to discourage continued widespread development of undeveloped land, and we recommend DOER take a more conservative approach to help ensure the disincentive works as intended.

In order to facilitate appropriately sited solar development, DOER should increase adders or other incentives for co-locating solar facilities on already developed and/or compromised lands including but not limited to landfills, brownfield sites, abandoned mine sites, highway cloverleaf interchanges, gravel pits, sewage treatment plants and other similarly developed municipal lands, above parking lots, on large commercial building roofs, and on business and industrial park lands.

DOER proposes moving projects under the Public Entity Adder Category 1. We disagree. There is no need to encourage development of undeveloped public land. If DOER wants to encourage public projects, it should increase the Public Entity Adder, as it proposes to do.

We thank DOER for including the Pollinator Adder in its straw proposal, but we urge that such a Pollinator Adder on existing and new sites be verified as having been completed and sustained for the Adder to be applied. Once these sites are established DOER should conduct an analysis to determine the effectiveness of the adder and viability of the pollinator habitat.

We respectfully suggest that DOER could do several things to increase solar energy capacity in the Commonwealth while simultaneously protecting our forests, farmland and other natural sources.

- DOER should adopt land-siting criteria that would effectively limit any all solar development, on Prime Farmland Soils, Prime Forest Land, BioMap2 Core Habitat and Critical Natural Landscape, Designated Priority Habitat of state-listed rare species, and Permanently Protected Open Space.
- DOER should be tracking the conversion of forest and farmland for large ground-mounted solar development throughout the state to minimally be able to better understand and forecast impacts. The Harvard Study revealed that the Executive Office of Energy and Environmental Affairs (EEA) has statewide photovoltaic data created for internal use. EEA should make this data publicly available and should map all the PV projects in the state in order to show the full impact of solar development on greenfields and brownfields. Additionally, 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 energy and land use researchers can evaluate ongoing energy system and land use impacts. This data could easily be made available as a GIS layer within OLIVER.



- In order to facilitate appropriately sited solar development, DOER should increase adders or other incentives for co-locating solar facilities on already developed and/or compromised lands, including but not limited to landfills, brownfield sites, abandoned mine sites, highway cloverleaf interchanges, gravel pits, sewage treatment plants and other similarly developed municipal lands, above parking lots, on large commercial building roofs, and on business and industrial park lands. According to the Harvard Forest study the majority of PV systems are situated on land that was previously undeveloped, with 77% of systems (952 acres) located on land that either was forested (37%), in agriculture (34%), or covered by shrub, scrub, and/or herbaceous vegetation (6%; Figure 2). Photovoltaic siting on developed land, including presently-used parking areas and buildings, comprises only 23% of PV systems.
- 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. Small towns throughout the commonwealth have been overwhelmed by proposed solar projects. Many towns have limited staff and much of the work is done by volunteers. Several towns are being sued by solar developers over their solar by-laws. The Greenfield Subtractor has failed in the first iteration of the SMART program due to the 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 not designed to consider the natural resource values of undeveloped land. Under DOER's current proposal, we can expect that 60% of the solar projects would still only get half a disincentive- directly counter to the wishes and intentions of community members and municipal boards. Zoning should have an impact on solar siting only when applied to developed land

Thank you again for the opportunity to comment on the 400-megawatt review of the SMART program. We look forward to working with DOER to help Massachusetts reach its emissions reduction goals through the increased capacity of solar development as well as through forests, farmland and other natural systems.

Sincerely,

William G. Constable, President
Massachusetts LAND Trust Coalition
18 Wolbach Road
Sudbury, MA 01776
www.massland.org