RENEWABLE ENERGY
Development Partners, LLC

via email: DOER.SMART@mass.gov

September 27, 2019

Massachusetts Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: 400MW Review Public Comments

Dear Commissioner Judson and DOER staff,

Thank you for the opportunity to comment on the Department's 400MW review proposal. As background, Renewable Energy Development Partners, LLC ("REDP") is a project development firm developing commercial-scale solar and other renewable energy projects throughout New England, with projects developed in partnership with both public and private sector entities including municipalities, water and school districts, public educational facilities and agricultural landowners. We developed 40 MW of solar PV under the SREC I and SREC II programs, and are currently developing a substantial portfolio under the current SMART program.

As an initial comment, we would like to express our appreciation to the Department for its comprehensive review of the SMART program, productive recommendations for improving the program and effective outreach to stakeholders for input. Overall, we think that the Department's straw proposal will improve the program and will facilitate its continued success.

As a stakeholder, we would like to offer comments on certain aspects of the Department's straw proposal, as follows:

Energy storage mandate for projects >500kW

While we generally support the Department's goal of expanding the adoption of energy storage systems coupled with distributed generation solar in Massachusetts, especially large-scale solar projects, we have concerns with the implementation of such a broad requirement. It appears that the Department is proposing that all STGUs >500kW must be paired with energy storage. An initial concern is whether this requirement would apply only to projects >500kW that would apply under the 800MW expansion of the program, or to projects >500kW that apply after the filing of DOER's proposed emergency regulations. We request DOER clarifies this in the draft regulations.

While paired energy storage systems make technical and financial sense in many situations, there are situations in which paired energy storage systems do NOT make sense. For instance, while solar systems are covered by a broad statewide exemption from restrictive local zoning, energy storage systems are not. Very few cities and towns have specially addressed the siting of energy

storage systems in their bylaws. Many towns have provisions in their by-laws that prohibit uses that are not expressly allowed. While it is conceivable that an energy storage system could be interpreted by a local zoning official as being an ancillary use to the already allowed use of a solar facility, many financiers would find that to be an unacceptably risky interpretation of zoning and subject to challenge, especially since most solar facilities currently exist without storage. In addition, local zoning officials are generally unfamiliar with energy storage systems, and since these systems are not completely benign some level of siting review and provision for the protection of public health and safety is generally appropriate. We have already encountered situations in which a site was well suited for a solar facility >500kW, and fully complaint with local zoning requirements, however the site was not well suited for the co-location of a paired energy storage system. Coupled with the inconsistent and uncertain local review and approval process regarding paired energy storage systems, we foresee situations in which otherwise well-sited and beneficial solar projects would not be eligible for the SMART program.

Additionally, it is well documented that obtaining an interconnection application for a new project is a lengthy process. Adding storage to a project that has already been studied, or is in the process of being studied, will add uncertainty and further delays to an already uncertain and lengthy process. Many "solar-only" projects are quite advanced in the development process yet waiting for interconnection studies to conclude and interconnection agreements to be executed so that they may apply for SMART eligibility. A mandatory requirement to add storage to projects such as these would not only create significant additional interconnection delays and uncertainties, but would force projects to go back and modify the land use permits and approvals that they have already obtained. Such a requirement would likely jeopardize the viability of the entire project, and in our particular case, result in the loss of significant investments of time and money.

The co-location of solar and storage is still a nascent concept without the benefit of learned experience of the full range of benefits and challenges to the grid. In addition to the delays on the distribution side, there is the possibility of broader impacts. We think that given the turmoil surrounding interconnection in saturated areas, to require the addition of storage could create unintended consequences for interconnection. Specifically it could trigger upgrades or higher costs for a project, including transmission level review.

Finally, if storage were to become a hard requirement, the adder tranches will move far more quickly reaching the point where storage might not be economically feasible, defeating the goal of adding more MW of solar to help the Commonwealth meet its clean energy and Global Warming Solutions Act goals.

For the reasons outlined above, we request the Department consider creating a pre-defined set of exceptions to the mandatory storage requirement, to include exceptions for projects sited in towns that have not established clear precedent or permitting pathways for energy storage and for projects which have already begun the interconnection study process and/or obtained local permits, as well as the creation of a "good cause" waiver process to cover unforeseen situations. It remains unclear whether the local utilities will consider the addition of energy storage to be a major modification to an application that has been filed and is awaiting study. If they do, then

many projects which have already applied without storage would lose queue position to other projects which had applied with storage but which had been behind in the application queue. Accordingly therefore we would also request that in the event of such a determination, the project be allowed a waiver from the energy storage requirement.

Changes related to Dual Use Agricultural Systems

REDP is currently developing several "dual use" projects, working in partnership with local growers to optimize the use of their land, to provide needed diversification of income streams and to preserve agricultural use of land. We strongly support the dual use concept and believe that it is a valuable component of the overall SMART portfolio. We encourage the Department to continue supporting dual use projects, and to seek ways to eliminate the barriers that have limited the adoption of dual use projects to date.

We note that the Department has proposed to add a DC size limitation of 2.5MW DC to supplement the existing 2.0MW AC limit. While our dual use projects currently in development generally fall within the proposed DC size limit, we foresee instances where this limit may be problematic. For instance, typical solar design practice includes a DC/AC design ratio of 1.3-1.5:1, to maximize the utilization and cost efficiency of project inverters. Therefore a typical 2.0MW AC project which is the current limit as outlined in the Guideline Regarding the Definition of An Agricultural Solar Tariff Generation Unit ("ASTGU Guideline"), would likely have between 2.6MW – 3.0MW DC of panels to optimize the project's economics. Additionally, adding energy storage (one of the Department's stated goals) to a 2.0MW AC system typically facilitates a further increase in the DC/AC design ratio (frequently ~2:1), and thus the system DC size, to optimize the project's economics even further. In some cases a high DC/AC ratio is required to simply make the project economically viable, for instance in cases where the interconnection costs are high. One factor that already limits the DC/AC ratio is that as the DC/AC ratio increases, a significant fraction of daytime generation gets shifted to off-peak hours, which can cause or exacerbate issues on the distribution grid. Accordingly, we would encourage the Department to allow some flexibility in the allowable DC project size. Alternatively, if the Department seeks to limit the "impact" of dual use projects in terms of acres per project, then we would encourage the Department to establish an acreage limit per project instead of a DC limit. Here again, the Department should allow some flexibility in the application of this limit, or establish a "good cause" waiver process, to account for the wide variety of potential dual use applications.

We also note that the Department intends to update the ASTGU Guideline. We understand that the proposed changes to the ASTGU Guideline will be released in the near future, and that we will have the opportunity to comment on the changes at that time, so we will withhold our specific comments until we can review the changes. With regard to the pending changes to the Guideline, we would encourage the Department to seek input from the agricultural community as well as local/regional agricultural research facilities. One of the current challenges with the application of the Guideline is that it takes a "one size fits all" approach to the dual use concept, and it would be beneficial if the Guideline could accommodate the differing planting, cultivation and harvesting requirements of the wide variety of commercial crops that are or could be grown in Massachusetts.

Additionally, we note that the 400MW presentation suggests that the changes will, among other things, "increase minimum sunlight requirements". With respect to sunlight, we have worked extensively with the agricultural community and professional agronomists to identify and develop planting plans for a variety of commercial crops that are not only "shade tolerant" but that are in fact expected to thrive in a partial shade environment. Furthermore, based on our experience and research to date we are increasingly convinced that having areas of more and less direct sunlight, and adequate levels of indirect sunlight, within a proposed farming plot will likely have substantial benefits in terms of crop flexibility, soil moisture retention and reduced irrigation requirements, dust control, and improved working conditions for farmers and field workers. Consistent with our comment regarding changes to the Guideline, we would encourage the Department to preserve flexibility in the application of "minimum requirements" based on the particulars of the dual use proposal.

Location Based Adders & Floating Solar

We note that the Department is recommending to eliminate the reduction of location based adders as these tranches become full, in an effort to further incentivize development in favorable areas and in recognition of the additional and ongoing cost burdens that these projects carry. REDP supports this proposal and believes such a change will have a positive impact on favorable project siting.

We also note that to date the Department has not approved a single "floating solar" project under the SMART program, presumably because not a single floating solar project has applied. We are currently working with several agricultural landowners that have human-made agricultural reservoirs well suited for floating solar applications, and have been approached by several others. Unfortunately, in our experience the current adder is insufficient to secure investment capital in these projects in light of the significant technical and operational uncertainties associated with floating solar in the New England climate. We believe floating solar can and should be a meaningful component of the overall portfolio of solar projects installed under SMART, as it furthers a number of policy objectives and can provide modest but critical financial benefits and security to local growers able to host these projects. To that end, we would encourage the Department to consider increasing the adder value for floating solar projects by another two to three cents per kWh on human-made reservoirs serving agricultural land.

In closing, we would like to commend DOER staff for their thoughtful efforts in evaluating the SMART program and offering constructive recommendations for improving it. Thank you again for the opportunity to comment on the restructuring of this important program.

Regards,

Hank Ouimet, PE (FL), LEED AP
Managing Partner