



**via email: [DOER.SMART@mass.gov](mailto:DOER.SMART@mass.gov)**

November 6, 2019

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

Re: Agricultural Systems Guideline Comments

Dear Commissioner Judson and DOER staff,

Thank you for the opportunity to comment on the Department's draft revisions to the Guideline Regarding the Definition of Agricultural Solar Tariff Generation Units ("Draft Guideline"). As background, Renewable Energy Development Partners, LLC ("REDP") is a locally owned project development firm developing commercial-scale solar and other renewable energy projects in the Commonwealth and 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 over 40 MW of operating solar PV projects under the SREC I & II programs, and have a substantial portfolio in development under the current SMART program.

We have a particular interest in the development of "dual use" solar/agricultural projects under the SMART program. We are currently constructing an approved dual use project; we are actively developing additional dual use projects under the current Guideline in partnership with local farmers; and local farmers and growers routinely approach us seeking to both preserve their existing farmland and to diversify their revenues by hosting well designed dual use projects. We believe that dual use, or "agri-voltaic projects", are rightfully a key component of DOER's SMART program design. As DOER has repeatedly stressed, it would prefer to see solar installed on previously developed sites or installed such that the solar complements rather than supplants existing agricultural use.

While we have provided some detailed comments below, we would like to initially offer some high-level thoughts about updating the Guideline. We understand that DOER desires projects that incorporate solar into various agricultural operations, from herd grazing to various vegetable crops to cranberry bogs, without significant detrimental impacts. In order to achieve this result, the Guideline must have flexibility to accommodate varying project designs based on the type of agricultural activities planned. In addition, part of the goal of this aspect of the SMART program is to "test out" how various agricultural uses perform when co-located with solar arrays, and flexibility in design and approach are important tools to reach this goal. Furthermore, the Guideline must provide a "safe harbor" for ASTGU eligibility. As DOER is aware, project developers need certainty around eligibility for incentives like the SMART program in order to

finance the project and achieve other development milestones. The Guideline should be structured to minimize subjectivity and thus serve as a minimum standard in the design of ASTGUs, such that a developer can have certainty of eligibility if their ASTGU design meets the Guideline's requirements. If developers seek to design their ASTGUs such that they are not in compliance with the Guideline, they can elect to seek a waiver from the Department with its inherent subjectivity risks.

At this stage, we do not believe that it is productive to make significant changes, especially ones that are more restrictive, to the Guideline until more information can be gleaned from early agri-voltaic projects as to what is successful and where improvements could be made. As DOER has repeatedly made clear, one of the primary goals of the SMART program is to encourage a diversity of solar projects in the Commonwealth. Adopting major changes that would further restrict ASTGU eligibility would be detrimental to this goal of project diversity. Furthermore, such changes would conflict with DOER's stated land use goals and would undermine the SMART program's support for agricultural activities in the Commonwealth. Accordingly, we would encourage DOER to reconsider making the proposed changes to the Guideline at this point.

#### Minimum sunlight requirements

The Draft Guideline proposes to increase the minimum direct sunlight amount from 50% to 60%, and to create a new "average sunlight requirement" of 70%. As noted above, until DOER has collected significant data that shows the current 50% minimum requirement is significantly detrimental to agricultural production, we feel making this change is counterproductive to DOER's stated SMART goals.

It is well known that differing agricultural crops have different sunlight needs. Further, there is a growing body of anecdotal data and some research that supports the proposition that certain crops actually do better in partially shaded conditions. The program should have the flexibility to support the wide variety of agricultural activities that currently exist in the state, and as such the program should not impose a "one size fits all" sunlight requirement.

We would also note that the Draft Guideline fails to include any consideration for indirect (reflected) sunlight, although it is well established that indirect sunlight is a significant component of the light that plants are able to use.

We would encourage the Department to reject changes that make program eligibility requirements less flexible, especially without a compelling scientific basis (based on real project data) to do so. If the Department is insistent on making these changes, we would encourage the Department to include consideration for indirect sunlight in any quantitative analysis of ASTGU design (as we have done in our project analyses to date).

#### Compatible sunlight needs

The Draft Guideline includes a new requirement to "provide documentation" that proposed sunlight reduction is compatible with the proposed crops. It is not clear what purpose this serves

for projects that meet the minimum sunlight requirements. In addition, it adds a new subjective requirement without specified criteria for review and approval.

#### Agricultural yield metric

The Draft Guideline includes a new “minimum yield” metric along with sample calculations for determining the yield. While the minimum yield metric could be construed as an improvement over what could be interpreted as a “no impact to yield” standard in the current Guideline, and while the sample calculation is helpful, we have a number of questions related to this new standard:

- What is the basis for setting the minimum yield at 70%? Is this supposed to correspond to the proposed minimum sunlight of 70%?
- How does a developer establish the projected crop yield under the proposed ASTGU? There is very little data that quantitatively correlates crop yield to variations in direct sunlight amounts. Who will review the projected crop yields and what will be the review standard?
- Will the 70% yield requirement be an ongoing requirement or only an initial eligibility requirement? If ongoing, what will be the methodology to determine what the yield in any given year would have been? There typically will not be a “control plot” at the same farm site to establish what yields would have been without solar each year.

Again, these changes appear to introduce significant subjectivity to the eligibility process, which is counter to the safe harbor concept discussed above. Furthermore, any ongoing requirement to hit an arbitrary yield metric without the ability to quantify what the yield would have been but for the solar array, in a manner that accounts for the significant uncertainties and variability inherent in farming, will make any ASTGU project unfinanceable. In our opinion, such a requirement would halt development of ASTGU projects immediately.

#### Optimized balance

The Draft Guideline includes a new section titled Optimized Balance (section A.7.a). This section appears to add a new requirement to compare pre/post agricultural yields to pre/post “electrical kW capacity”. Frankly, we are not sure what the purpose or intent of this section is, nor is it clear to us if and how we are supposed to demonstrate compliance. We would encourage the Department to reject these proposed changes unless the purpose and intent can be clearly presented and compliance can be objectively demonstrated.

In closing, we would reiterate our concerns about making significant changes to the Guideline, especially changes that create new subjective requirements without a compelling scientific basis or clear path to compliance. Such changes would simply frustrate agri-voltaic project development. We would strongly urge DOER to avoid imposing such new requirements at this time. We suggest that DOER would be best served by creating a working group that involves MDAR and members of the solar and agricultural communities to talk through the issues that prompted the proposed changes to see if a consensus process could produce agreed upon clarifications to the Guideline to ensure the continued development of agri-voltaic projects.

We would like to commend DOER staff for their 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,

A handwritten signature in black ink, appearing to read 'H. Ouimet', with a long horizontal flourish extending to the right.

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