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Comments to the
SMART Program 400 MW Review posted September 5, 2019

Director, Renewable & Alternative Energy Division
Department of Energy Resources

Re: SMART Guideline Comments:

Definition of Agricultural Solar Tariff Generation Units Guideline relatively is unchanged by the inflexibility of the guidelines in place, with the Exception of an addition of Pollinator Habitat.

In 2018 comments I pleaded with the program director to modify the provisions that dictated the details of design that essentially eliminate a whole segment of Massachusetts farmers from participating in the program. That is small cranberry farms currently most at risk, limited by soils, proximity to wetlands and now suffering directly from market disruption caused by tariffs
The program may read like a dream but in all practicality is inaccessible to most cranberry farms but the very big ones.

I am pleased that **the program has broadened the narrow focus from "Prime Farmland soils" to include "Unique Farmlands" and additional land of "statewide importance." Cranberries farms are defined in "Farmlands pursuant to 7 C.F.R. § 657.5" to be , "unique farmlands" and noted as of statewide importance in the 2016 Massachusetts Revitalization Task Force Final Report. That report specifically included incorporating renewable energy generation onto the farms.**

However the agricultural requirements and exclusions in the guidelines expressly disincentive cranberry land which is otherwise covered in trees. And, the design requirements raising the panels regardless of the crop, in the Ag Solar Tariff Guidelines are inflexible to our town by-laws which require that the panels are unseen from the road. So I watch my fellow growers try in vain to site solar panels on their wetland cranberry bogs. We can do better!

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We certainly do not have an excess of viable farms in The Commonwealth.

Rather than focus on obstructions for Dual Ag Use, I strongly urge DOER & MDAR to "Find a way to get to YES"

My comments & suggestions on the next page will further explain:

A Real Life Example

We have proposed a solar project that would incorporate a 1 megawatt solar array, occupying almost 7 acres of land stretched across the back of our farm behind the cranberry bogs that would incorporate the growing of beachgrass on the southern end closest to residential neighbors and a 90 plus hive apiary on the northern end closest to neighboring cranberry bogs.

Both agricultural projects are indisputable in their economic value and potential income; both are entirely compatible with the soils limitations of most cranberry farms (sand) and the economic requirement to grow cranberries, (an apiary & beachgrass). Both projects would remove carbon from the environment. We have experience with both and confidence that they can be accommodated within an array designed for that purpose. **I will also say that my farm was chosen as a finalist for the Leopold Award in Conservation by Sand County Foundation, New England Forestry Foundation, and American Farmland Trust-New England, specifically for the Dual Use Solar Proposal that I can't get approved by NDAR!**

We do not "fit" the confines of the prior provisions, although a small accommodation for pollinator habitat has been added, I find what is offered is snatched back in the guidelines restrictions for many cranberry farms like mine.

TOO MANY cranberry farms won't fit the model

AND WHY the Dual Use agreement is so important to cranberry farms (regardless the adder)

Cranberries are one of only 3 native fruits, absolutely tied to the heritage of our state, arguably one of the dominant agricultural industries economically. However, cranberries are grown on sandy soils excessively limited for most crops, and in wetlands and proximity to wetlands and water ways. Consequently **most of other upland around bogs is covered in pine forest or within close proximity to farmed cranberry bogs hence buffer zone to wetlands.**

As a consequence we have very specific agricultural exemptions to the state and local regulations that define what we can do on our farm including upland "buffer" to our bogs. There are normal maintenance and improvement practices however that land MUST BE IN AGRICULTURAL USE. A solar installation on land that is not primarily in agricultural use is not entitled to those exemptions. Some are as simple as cutting a tree or clearing noxious brush. **A Dual use agreement keeps our farms intact, managed as a system as we currently do, because they are integral part of the farm, <u>in ag use.</u>**

Catch 22 Cranberry lands don't fit

1) The Dual Use Agreement **specifically excludes clearing woodland and disincentives' cutting trees** even when patch cuts makes the greatest sense with other desired benefit: control shade on the crop, pest control and lower fire risk (always high in sand pine complex), wildlife habitat management.

2) Understanding the avoidance of "**deforestation"; Patch Cuts are a desirable forest management practice AND conducted under the guidance of district forester, and maintained in early successional**

forest for silvopasture or pollinator habitat (two very different agricultural practices) should be seen as rotational forest management and never be considered deforestation! Attachments to these comments will assure you that forest patch cuts for pollinator habitat are encouraged by New England Foresters in every state. **Cranberry growers in particular are in dire need of insect pollination around their bogs.**

Patch Cuts Are NOT Deforestation

In a patch cut, there is minimal disturbance of soil where 50% of the carbon sequestered by trees in New England is stored. Point of fact: 1 acre of New England forest trees sequesters 15T of carbon per year (50% in the soil) and 1 acre of solar panels off-sets 132 T of carbon per year. And the new growth in the early successional forest land takes up carbon.

Patch cuts reduce fire hazard in sand/pine ecosystems; forest fires release carbon to the atmosphere.

Here is how the SMART program could accommodate reasonable "patch cuts" in the Dual Use adder:

1) Set acreage limits (min and max) for habitat from Forests Service Recommendations.
2) Allow the soil to be as undisturbed as possible maintaining the integrity of the soil. Encourage diversity in the forest re-growth. Management requires the removal of invasive plants.
3) Require that the applicant manage that early successional habitat according to a forest stewardship plan verified by the District foresters.
4) When the lease is up or when technology makes them obsolete, the panels can be easily be removed and the forest is allowed to mature in rotation.
5) **The Ag adder should appropriately reflect the cost of annual maintenance of the required forestry practices.**

Pollinator Habitat!

While I am delighted that the program has recognized pollinator habitat as a worthy ag use**, It should also recognize the establishment and operation of a honey bee apiary for pollination and for honey production. This practice is far more intensive and requires a full Ag adder to accomplish successfully.**

Honey Bee Apiary It would involve putting honey bee hives under the south facing edge of the panels and managing the bees which in intensive. It also requires additional car in the maintenance of the panels and great accommodation on the part of the solar company. However, Honey bees are a critical need in growing food and flower crops in Massachusetts and an overall benefit to the Commonwealth.

Verifying this practice is not difficult. **Massachusetts has an Apiary Department with inspectors** that make annual visits to inspect apiaries throughout the state to control disease and pests.

1) The program is currently voluntary for small apiaries, mandatory for larger ones.

2) It could be mandatory for Apiaries in the SMART Program and thus verify the honey bee census.

Why the Commonwealth Should "Find a Way to Get to Yes"

The Ag "Adder" Provision is The Best Option for the Commonwealth:

The arrangement between a landowner and a solar company where an Agricultural "adder" is in place is a far better project for protection of the resource base then without. Examples on the landscape abound. To accomplish an Ag Solar Project that would qualify and be operational throughout the life of the array, the design must work within the landscape of the farm environment. It requires a lot of work, concessions & commitment on the part of both the solar developer and the landowner from the very outset & throughout the operation. That comes at a cost that must be realized. **Otherwise the incentive for both is to install as many panels as they can, unconstrained by other considerations.**

And we can save farms into the future with on-farm renewable energy generation without wrecking the place.

When the agricultural enterprise is required and accountable to maintain the Ag Solar Tariff then both parties have a vested interest in the continued success of the agricultural enterprise within the array. They are, in essence, in a partnership for success. Ultimately that will provide the best incentive to keep up the arrangement and requires less intervention or enforcement by the state.

Flexibility within an agricultural system that continues to produce agricultural products, as well as energy, at a rate that appreciates the value of accommodating both, may be the key to the continued sustainability of many small farms.

Thank you again for the opportunity to comment. I will be happy to answer questions.

Array below is in Fairhaven Ma. & would accommodate beachgrass between rows: similar spacing for a working + 90 hive apiary with clover cover.

Pictures taken on December 8, at 10:30am