



October 30, 2020

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Email: DOER.SMART@mass.gov

Re: Agricultural Solar Tariff Generations Unit s Guideline Comments

Dear Eric,

We appreciate the stakeholder engagement, the listening sessions and the return to some of the original Agricultural Solar Guidelines. In addition, given where DOER and MDAR have come from relative to the agricultural solar regulations, we understand how the department may have come up with the straw proposal as written. However, despite the best of intentions, we believe that the department will significantly inhibit the success of agricultural solar program if the following portions of the straw proposal are adopted.

Proposed ASTGU Straw Proposal Size Restriction:

Proposed Straw Proposal Language: ASTU size shall be no more than the larger of:

- 2 MW AC or
- No more than 50% of the eligible farmland based up the DC system size capacity, up to 5 MW AC

Farms are economic entities. Farmers are looking to us to provide them project minimums or minimum revenue streams. We are currently getting push back from multiple farmers relative to project minimum sizes because of the economic pressure they are experiencing on a daily basis. Most farmers perceive a 25 to 35-year solar land lease as a “lifetime” commitment for them. If the economic benefit is not enough, why should they “tie up” their land asset in a small two megawatt (2MW) solar land lease when that same acreage could be converted to four or more house lots or condominiums?

Please Do Not Choose Winners and Losers Among Farmers:

We have a farm family that has been grazing cattle on their 36-acre farm for over 100 years. The farmers desire to install as much agricultural solar as possible, as they fully intend to continue to graze cattle under the solar arrays. Conventional ground-mount solar is not an option to consider, as it would impede their ability to farm the land. Because the agricultural use is cattle, the lower leading edge of

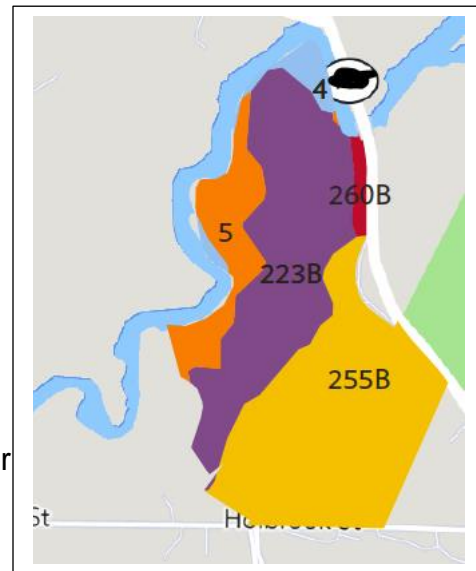
the solar panels will be ten (10') feet above the grade as cattle, reportedly, can reach the eight (8') foot height. The ten (10') foot panel height is our design/risk management choice.

We anticipate the Saco silt loam (5) to represent poorly drained wetland soils, as indicated below, which would leave enough acreage for 4.5 MW AC on the remaining land of otherwise Prime and Statewide Importance Farmland soils. This will leave sufficient land for an estimated 4.5 MW AC dual-use Agricultural Solar to be installed on the land. The difference between a 2.5-3 MW system with a 2.5-3X solar land lease revenue stream (as allowed under the straw proposal) and a 4.5X solar land lease revenue stream might make the difference between the farm being able to pay insurance, municipal tax bills, general overhead and/or provide cash flow for replacement heifers just to stay in business.

All fields
47 ac

Source: NRCS Soil Survey

SOIL CODE	SOIL DESCRIPTION	ACRES	PERCENTAGE OF FIELD	SOIL CLASS	NCCPI
255B	Windsor loamy sand, 3 to 8 percent slopes	21.80	46.0%	2	32.8
223B	Scio very fine sandy loam, 2 to 5 percent slopes	17.68	37.3%	2	67.8
5	Saco silt loam, 0 to 3 percent slopes	5.58	11.8%	6	14.2
4	Rippowam silt loam, 0 to 3 percent slopes	1.57	3.3%	4	35.9
260B	Sudbury fine sandy loam, 2 to 8 percent slopes	0.74	1.6%	2	45.8
		47.37			44.0



While the farm Trust has many members, as long as the farm continues as a farm and the 45-year old daughter and her 65-year old partner continue to farm the land, the economic interest of other Trust members are not considered. If the land does not continue as a farm, the land is to be sold with the value divided up amongst the Trust members.

Why penalize the small to medium-size farm? It is the small to medium-size farm that does not have the scale to compete and is under the greatest pressure to be converted to house lots or some other use.

Straw Proposal language: ASTU size shall be no more than the larger of:

- 2 MW AC or
- No more than 50% of the eligible farmland based up the DC system size capacity, up to 5 MW AC

Larger farms of over 70 acres can comply with the proposed 50% land rule based upon a rule of thumb of 1 MW of agricultural solar per 7-8 acres of dry land. What happens to the farms with between 15-40 acres? Under the 50% rule, fifteen (15) to forty (40) acres could accommodate between 2 MW AC and 4 MW

AC of agricultural solar, depending upon wetlands and topography. Why are they being singled out for special treatment and excluded by public policy?

An Agricultural Solar Land Lease will guarantee that the land will remain in agricultural use for 20 years to maintain compliance with the SMART program. The solar land lease is for a 25-year term with two 5-year renewals. The installed solar generation asset will continue to provide economic dual-use benefits to both the farm family and the renewable energy goals of Massachusetts through 2050.

Reducing Ground Footprint with Technology: Solar + Storage

Straw Proposal Language:

DC Cap: 125% of the AC size of the project.

Literally, at this writing, we are engaging solar engineers to model, for fiscal and design purposes, a solar + storage scenario where we un-clip the inverter and use the energy storage system as a means of absorbing the un-clipped energy, all the while maintaining the limits on the export capacity of the system. This is not “gaming the system” but sound fiscal and engineering practice that should become part of every installation. Why would public policy want to blunt innovation?

It is important to realize that as the watts per solar panel increases (300 watt vs. 440 vs. 490 watt solar panels), the square footage per watt of solar panels on the ground decreases with the AC rating remaining constant. Adding on the bi-facial advances of solar panels and the square footage of panels on the ground continues to shrink. Innovation, technology and applied design may accomplish the same goals that the straw proposal language is trying to address in the restriction on AC/DC size. On a project-by-project basis, assuming baseline economic viability, based upon project programming, there will be a sweet spot from an engineering and financial prospective that makes sense for that project. Please consider not putting restrictions on innovation by an arbitrary maximum DC project size.

Recommendation on ASTGU Size:

Allow all ASTGU projects to be allowed 5 MW AC per parcel subdivided before January 1, 2010. Despite our anticipation that solar panel density will continue to increase (think > 500 watt panels), if the department still feels that there needs to be a requirement to limit project size, please consider using 7,500 kW as the maximum DC size of the project.

Eligible Farmland Language in Straw Proposal:

Straw Proposal Language: All eligible farmland shall be measured as all land that is owned by the farm or leased by a lessee, and:

- Land defined under 61A or has been enrolled in 61A in past five years or
- Prime farmland, unique farmland and additional land of statewide importance

Nothing in the Guidelines should prohibit the return of land in Prime, Unique or Farmland of Statewide Importance soils from being returned to farmland. This would mean that the land might not be owned by a “farm” or an existing “leased by a lessee” parcel of land.

Example: The farm parcel with Prime Farmland soils is in the lower center of the adjacent picture. The parcels to the right and upper left are not existing farms. AGSTU policy should not prohibit the development of parcels that are of Prime, Unique or Statewide Important soils and not associated with an existing farm. AGSTU policy should encourage the return of land of Prime, Unique or Statewide Importance to agricultural use. This is accomplished by using the capital investment of dual-use agricultural solar to accomplish expanding the acreage of land in agricultural use in Massachusetts.



Compliance: Keeping Land in Solar & Agricultural Dual-Use

A solar developer or long-term solar asset owner is not in the farm business as their primary business. Due to compliance obligations in the SMART regulations to maintain the Agricultural adder, the developer owner is, at a minimum, in the compliance business and will need to manage the dual-use process. Even on farm owned land, if the farmer is unable or unwilling to farm the dual-use Agricultural Solar field, the solar developer/IPP must find a farmer or establish relationships with young farmers to farm the land or hire staff to farm the land.

Apart from those farmers that graze animals and hay fields, most of our existing farmers have a full-time commitment farming and maintaining their own land. We anticipate the Agricultural Solar program to engender establishing new relationships with organizations that encourage new young farmers. With dual-use Agricultural Solar, the solar developer through the capital stack will provide the capital improvements as land control and easements, cleared land in approved soils, fencing and most likely a water source, and the new farmer would become a “lessee” for nominal (\$1.00) rent. The only obligations of the new farmer lessee would be to maintain a clean and safe site, be a good neighbor/business partner, and meet the annual reporting obligations of DOER.

Notice of Default and a Method to Cure:

Financial institutions are going ask the “What if” scenarios if the Annual Farm Report is not satisfactory. Then what happens? There needs to be a path to cure and unsatisfactory condition. The expense of the ASTGU racking is so expensive and the revenue is the only justification for such an expense that if the revenue disappears, project viability would be in jeopardy. Within the Guidelines, there needs to be a notice provision and a cure period

What if the farmer dies or has a serious health issue in July? What happens if the farmer goes bankrupt? What if there is some kind of blight that affects the crops? What if there is a serious drought and crops fail, grass dries up and cattle get moved off site without notifying the Developer/IPP? With each one of these issues, it will be incumbent on the solar developer/IPP to stay in touch with the farmer and be prepared to manage the process. But, a Notice provision and a method of getting through the cure period does need to be inserted into the Guidelines.

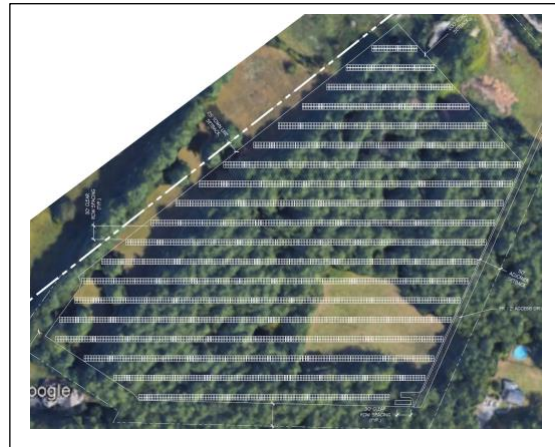
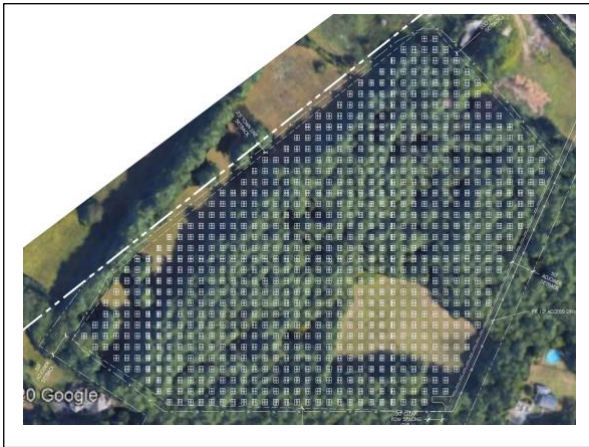
Recommendation: For whatever reason, if the Annual Farm Report is not satisfactory relative to the business plan approved by DOER or a third party entity for crops grown or animals grazed, a notice is given to the Developer that the Annual Farm Report subsequent year must meet the approved or revised dual-use business plan.

Design Flexibility:

The Guidelines should be written to allow for recognition of design flexibility.

Below we have a design which meets the 50% sunlight per square foot requirement and totals 2.177 MW AC. It is a perfect design for grazing cattle, which is the prime agricultural business of our farm customer. The design would be fine for the hand-planting and harvesting of vegetables.

However, given that as solar developer/IPP, we have SMART-compliance responsibility for 20 years, a land-lease for 25 years with potential renewals up to 35 years, we are asking for an alternative design totaling the same 2.1 MW AC. However, the design with the rows 30' apart does not meet the sunlight on every square foot requirement. We have submitted a "Guideline" compliant design (below on the left) that establishes the AC rating of the system. The design on the right has an AC rating of 2.1 MW and creates a design that may yield greater agricultural and business flexibility over the course of the SMART program and 25 to 35-year lease obligations. The language in the Guidelines will need to reflect a capability to accept AC-compliant yet alternative dual-use Agricultural Solar designs.



Above on the right, the rows have solar panels two in portrait, are in continuous length, with the rows thirty feet (30') apart. We believe the business case is more advantageous with the rows thirty feet apart, particularly for use with mechanical harvesting. We acknowledge we need to provide for turnaround space at the end of the rows in the final design. With a larger piece of land, greater than the 16-acres pictured, we could hold the rows further apart to increase the ability to use a greater variety of equipment or structures.

New Alternative Approval Process:

We support the American Farmland Trust as third-party application and approval entity that is focused on expansion of the SMART Agricultural Solar program. The American Farmland Trust as the third-party approval entity, should be capable of a back and forth, solutions-based dialog on a private sector timeframe that is capable of encouraging innovative use of dual-use agricultural solar projects. We firmly believe that the American Farmland Trust will provide a valued resource to interface with farmers and farmers looking for solutions to stay in business.

Farm Estate Transitions, Farmer Directed Land Use, Economic Competition

The farm family scenario on the 100+ acre farm shown below is typical for many AGSTU applications.

The farm family does not want to use their cleared, cultivated farmland; they want to use their least productive land which is currently treed. Farmers have their own equipment, means and methods and ideas about farming crops on their land.

The farm family is comprised of two brothers in their seventies and a 37-year old heir-apparent son who currently farms the land. When discussing solar policy with the family, the heir-apparent son said, unprovoked, “That (treed) land is either going to be solar or houses.” Utilizing the asset value of the land is important to farmers, and public policy should not ignore this reality.

If this land is developed as an AGSTU project, the land under the trees is Prime Farmland Soils and the dual-use public policy would in effect be returning that Prime Farmland Soils back into farmland.



Keep Original Guidance:

We support the Panel Height section, Maximum Direct Sunlight Reduction as a baseline for design (with some flexibility in long-term design), Compatible Sunlight Needs, Growing Season/Time of Day sections, as well as the Application, Annual Report section albeit with a cure provision.

61A: Adds Uncertainty on the ASTGU Program.

We support SB 528, as proposed by Senator Michael Rodrigues, proposing no change of use on land to which renewable generation sources are located.

The current guidance from the Division of Local Services is that land used for renewable generation like solar requires that the land be taken out of 61A as a change in use. This action triggers the Right of First Refusal (ROFR) provisions of the statute and payment of back taxes on the land.

Immediately after we have land control with the landowner/farmer, we would approach the Select Board or municipal authority to waive the ROFR requirement. Without this waiver, the 61A process ROFR process constitutes a cloud on the title and use of the land.

The Taxpayer's Guide to Classification and Taxation of Chapter Land in Massachusetts as published by the Division of Local Services stipulates that the ROFR gives the Select Board or municipal authority 120 days to review a completed application for such sale or change in use. Since the checklist is quite specific, it will take the developer a minimum of 45-60 days to complete the required engineering and legal work. Added to these delays would be the uncertain schedule of getting the ROFR on the town warrant for Town Meeting. This 61A ROFR process could take up to one year to complete.

Under current structure, the Impact Study/ISA process takes a minimum of nine (9) months to two years to complete. Co-incident with that Impact Study process the project loses four percent (4%) in value every 4-6 months under the declining block SMART program. The SMART program will only last 2-3 years.

The 61A ROFR process, if not waived by the municipal authority, places the developer in the position of having to choose whether to pursue the project and engage in pure political risk if they move ahead with the Impact Study with the utility, or walk away from the project. If the developer does not move ahead, by the time the project has met the qualifications for the SOQ, the declining block may have made the project incapable of being financed. If the developer takes the political risk and proceeds with the Group or Impact Study, the developer may lose that investment if the ROFR is moved to Town Meeting, is approved and the farmer withdraws the change in use application because he/she wanted to install a ASTGU project, not sell their land to the Town.

If the farmer simply wants a ASTGU project, the end result of the town exercising its right and putting the ROFR before Town Meeting pits many interests groups against each other, including environmentalists and land conservationists, and is not in the best interest of the farmer who is trying to find a way to keep the land in agricultural use, despite the 61A classification (or removal thereof) which seems to be thwarting the public policy purposes of incentivizing ASTGUs.



If possible, DOER should write the ASTGU Guidelines in such as fashion as to state that no change of use is intended by an application and installation of an ASTGU project.

Thank you again for your extended stakeholder process and for reviewing our suggestions.

Best Regards,

A handwritten signature in dark ink, appearing to read "Doug Pope", with a stylized flourish at the end.

Doug Pope
President