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October 27, 2021

By Email: DOER.SMART@mass.gov

Ms. Gina Bellato
Department of Energy Resources
100 Cambridge Street, Suite 1020
Boston, MA 02114

Re: SMART Guideline Comments – ASTGU

Dear Ms. Bellato:

My family has been farming in Massachusetts for over 70 years. After being forced, for the last three years, to review the SMART program and the solar development process due to an improperly planned solar project in my neighborhood, I have concluded a better name for this deeply flawed program would be the **NOT** SMART program.

My concerns with the revised Guideline for Agricultural Solar Tariff Generation Units (ASTGU) include but are not limited to the following:

- Under paragraph 1.) Purpose and Background of the Guideline: “Adopting additional provisions via this Guideline was requested by many commenters in the initial stakeholder process of the SMART Regulation. Such adoption, in consultation with MDAR, will provide the necessary flexibility for the Department to make modifications to key eligibility criteria as lessons are learned in constructing and operating an ASTGU.”
 - What specific provisions in the revised Guideline were requested by parties that financially benefit from ASTGUs, such as landowners and solar developers?
 - What specific provisions in the revised Guideline were requested by parties concerned with or opposed to the previous proposal? In effect, where is the evidence that the so called previous public comment period was not simply window dressing for those concerned with or opposed to the previous proposal?

- Instead of “...flexibility for the Department to make modifications to key eligibility criteria as lessons are learned...”, from unproven solar projects, shouldn’t MDAR and DOER have conducted long term studies that show under what conditions, and even if ASTGUs can work, prior to having approved so many of these 20 to 30 year subsidized experiments?
- Admission by MDAR and DOER that they do not know how to construct or operate an ASTGU is a questionable beginning for a program intended to reach an 80 MW AC capacity goal.
- Reliance on organizations or “stakeholders” for self-serving input to the Guideline revisions, by those who financially benefit from these revised policies, has the appearance of corruption.
- The definition of an Agricultural Solar Tariff Generation Unit under 225 CMR 20.02 states: “A Solar Tariff Generation Unit located on Land in Agricultural Use or Important Agricultural Farmland that allows the continued use of the land for agriculture.”
 - Where are the long-term studies that prove an STGU “allows the continued use of the land for agriculture” or without negative impact or unintended consequences?
 - Where are the long-term studies to prove these 20 to 30 year schemes benefit the people of Massachusetts and do not damage the environment or farm production?
- Under 225 CMR 20.06(1)(d) an ASTGU must demonstrate:
 - “1. the solar Tariff Generation Unit will not interfere with the continued use of the land beneath the canopy for agricultural purposes;”
 - Where are the long-term studies to show this is possible, under what circumstances, for which crops or uses etc.?
 - The failure of the DOER and MDAR in providing a basis for these energy projects disguised as dual agricultural use can easily be demonstrated by the following example:
 - In 2019, a deeply flawed 3-month study, (for a plant with a 16-month lifecycle) in Carver, MA of solar over cranberries using plywood panels, was used to justify the approval of solar over cranberry projects all over Massachusetts by MDAR (Massachusetts Department of Agricultural Resources) and the DOER (Department of Energy Resources).
 - Independent cranberry industry experts called the Carver experiment inadequate and unsupportive of compliance with the SMART program. (See attached Vorsa, Roper & JC letters sent to MDAR & DOER in 2020)

- The UMass Director of the mockup Carver experiment repudiated the study in 2021 in deposition testimony. Recently, it was learned the DOE (Dept of Energy) will provide a \$1.8 Million grant, involving some of the same participants in the original mockup, to study alternative energy over agricultural uses that may provide the evidence to show whether alternative energy impedes the underlying agricultural use.
 - In two years, there has been no response by the DOER or MDAR to the concerns raised in the Roper and Vorsa letters. According to the UMass Director, MDAR did not even provide a copy of these letters to her regarding the failed study, which was the basis of many approved solar projects in Massachusetts.
 - Does it make sense for MDAR and the DOER to have approved these experimental and unproven projects 2 years ago, before we have the results of the DOE grant 3 to 4 years from now?
- “2. the Solar Tariff Generation Unit is designed to optimize a balance between the generation of electricity and the agricultural productive capacity of the soils beneath;”
- Where are the long-term studies to show this is possible and under what conditions?
 - How is it possible to optimize a balance between the generation of electricity and the agricultural productive capacity of the soils beneath and not interfere with the continued use of the land beneath the canopy for agricultural purposes?
- “5. annual reporting to the Department and MDAR of the productivity of the crop(s) and herd, including pounds harvested and /or grazed, herd size growth, success of the crop, potential changes, etc, shall be provided after project implementation and throughout the SMART incentive period; and”
- What is the point of annual reporting if there are no yield or success requirements?
 - The lack of benchmarks indicates that either MDAR and DOER have no idea of what they are doing, or they don’t want clear evidence that the program does not work. At a minimum, it shows the need for long term studies to prove the concept works without negative impact or unintended consequences.

- Without long term studies to support them, the shading analysis tool (SMART Tool) and system design parameters are hopeful at best and potentially damaging to the agricultural use and environment at worst.
- Maximum ASTGU Rated Capacity:
 - “The maximum AC rated capacity of an ASTGU shall be five (5) MW. The maximum DC rating shall be 2:1 DC to AC ratio and shall not exceed 7.5 MW DC.”
 - Other than to satisfy the greed of solar developers and landowners, please identify the studies and analysis that warranted the increase from the previous limit of 2 MW AC for agriculture?
 - Who specifically made the decision for the increased limit and on what basis?
- Under paragraph 6) Annual Report: “Each year, an Annual Report must be provided to the Department and MDAR pursuant to 225 CMR 20.06(1)(d)(5) that demonstrates it continues to engage in commercial agriculture to retain and use the land primarily and directly for agricultural purposes pursuant to M.G.L. c. 61A §§ 1 and 2.”
 - DOER and MDAR have provided no long-term studies that demonstrate it is possible to “...retain and use the land **primarily** and directly for agricultural purposes...” with an ASTGU.
 - The lack of yield requirements under the Guideline, which would provide clear evidence of the negative impact of solar to the underlying agricultural use, are purposely missing from the SMART program. It is possible that in the future there may be post ASTGU yield requirements that will hide the reduction in yield caused by the ASTGU, or perhaps complicit landowners will lower their production targets to cover the lost use.
- The Guideline may be in conflict with Chapter 61A, Section 2A, subsection (a): “A renewable energy generating source on land primarily and directly used for agricultural purposes pursuant to section 1 or land primarily and directly used for horticultural purposes pursuant to section 2 shall: (i) produce energy for the exclusive use of the of the land and farm upon which it is located, which shall include contiguous or non-contiguous land owned or leased by the owner or in which the owner otherwise holds an interest; and (ii) not produce more than 125 per cent of the annual energy needs of the land and farm upon which it is located, which shall include contiguous or non-contiguous land owned or leased by the owner or in which the owner otherwise holds an interest.”
- Why does the Guideline not include liability provisions against the solar developer and landowner for any damage to the environment and neighbors of these sites?

- Why does the Guideline not include the process to remove the installation if not in compliance?
- Under the DOER 2020 emergency regulations, all solar projects over 500kW must be paired with battery energy storage systems. Battery energy storage systems are new to large scale solar development in Massachusetts and require towns to amend their bylaws to allow them with solar developments.
 - As of the date of this letter, the DOER has failed to notify Massachusetts towns of the need to amend their bylaws to allow these energy storage systems and the dangers associated with their use.
 - Battery energy storage systems pose a risk to the health, safety and welfare of the public. Toxic components of lithium-ion batteries include the toxic metal cobalt, hydrofluoric acid and PFAS (Perfluoroalkyl and Polyfluoroalkyl Substances). The hazardous materials in lithium-ion batteries for large scale systems, do not belong in sensitive environmental areas, neighborhoods or farming areas of food production.
 - There is a “probable” failure risk for these systems during a solar project’s 20-to-30-year life cycle. Mitigation attempts may reduce risk, but cannot eliminate it.
 - Do we really want to add toxic elements to our farmland and water supplies?
- Do we, as a society, want to support slave labor, used by Chinese manufacturers in the production of solar panels, as Senator Kerry has stated, by encouraging alternative energy on agricultural land? Most solar panels are made in China.
- Do we, as a society, want to support slave and child labor, used to mine 2/3rd of the cobalt found in lithium-ion batteries from the Republic of Congo, by encouraging alternative energy on agricultural land?

Please consider the DOER and MDAR are supposed to be working for the benefit of the people of Massachusetts and not the solar developers and landowners who are the main benefactors of these unproven policies. It appears these regulations are being written to benefit the special few at the expense of the public.

We should follow the science and first complete long-term studies to prove these concepts work and will not have any unintended consequences before wasting more money and risking more damage to the environment. ASTGU projects should be halted until long term studies have proven they can work without undermining the agricultural use and without any unintended negative consequences. Our diminishing farmland and clean water supplies are too precious to risk on unproven alternative energy uses.

All alternative energy projects and battery energy storage systems should be prohibited in ACECs (Areas of Critical Environmental Concern), aquifers, floodplains and well protection zones. Is there any reason to not protect these areas from the unintended consequences of these projects?

Who will the people of Massachusetts look to in order to repair the damage done by these unproven policies? Who will they blame for the damage done to the environment and neighborhoods by these ill-conceived and unproven projects? Solar slogans claiming to help farmers and the environment may prove false when the results of these experiments are finally realized.

Let alternative energy developers, landowners, and sponsors who financially benefit from legislation supporting these systems, assume the liability for the hazards and risks that exist or develop from them including hazardous waste, pollution, damage to neighbors etc.

Very truly yours,

Joseph Cogliano

Joseph Cogliano

cc: Eric Steltzer / DOER, John Lebeaux / MDAR

Attachments: 1-18-20 Vorsa letter, 2-23-20 Roper letter; 2-28-20 JC to MDAR, DOER letter