

202 Bay Road
Norton, MA 02766

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By Email: doer.smart@mass.gov, doer.siting.permitting@mass.gov,
green.communities@mass.gov

Massachusetts Energy Siting Facilities Board,
Department of Energy Resources, and
Massachusetts Green Communities Division

Re: Comments on the Draft Model Bylaws for Solar and BESS

To the above Board, Department and Division:

Please accept my comments on the October 6, 2025 Drafts of the Model Bylaws for Solar and BESS.

My opinions in this letter are based on my 7-year opposition to an improperly sited large scale solar project over cranberry bogs, co-located with up to 150 tons of lithium-ion battery storage proposed in an Area of Critical Environmental Concern (ACEC), the Canoe River Aquifer, a well protection zone, floodplain, and residential neighborhood without fire hydrants. As part of that ongoing opposition, I have had to engage wetlands, floodplain, water, battery, solar system and acoustics experts for additional information and expert testimony.

Although not inclusive of all of my concerns with the proposed Draft Model Solar & BESS Bylaws, please consider the following points in future revisions:

- In the often quoted Tracer Lane II case, the Supreme Judicial Court has confirmed that, under G.L. c. 40A, § 3, “all municipalities ... **maintain[] the discretion to reasonably restrict the magnitude and placement of solar energy systems**” and “**have more flexibility in restricting solar energy systems than they do, for instance, in the context of education, religion, or child care.**” Tracer Lane II Realty, LLC v. City of Waltham, 489 Mass. 775, 781-782 (2022).
 - In that case, the City of Waltham’s zoning “prohibited solar energy systems ... in all but **one to two percent** of its land area” without a “reasonable basis grounded in public health, safety, or welfare,” and therefore was contrary to the Dover Amendment. Id. at 782.

- In effect, it's a long way from solar restriction to one to two percent of a Town's land area under the Tracer Lane II case to the broad expansion of as of right development being proposed under the Draft Model Bylaws by the DOER etc.
- I believe that M.G.L. c. 40A, §3 has been misapplied for large scale commercial use by the Administration and Courts in Massachusetts to support solar development and only recently added battery energy storage over all other interests. Solar energy systems were added at Paragraph 9 under 40A, §3 in 1985 for residential use only, and not for large scale solar or battery energy storage systems.
 - “In view of M.G.L. ch. 40A § 3, local zoning provisions specifically allowing for the as-of-right construction of smaller solar energy systems – such as those commonly installed on top of or on the lot of a home or business—are unnecessary. **However, it is not clear whether M.G.L. ch. 40A § 3 applies to the construction of large scale ground-mounted systems.**” (DOER Model As-of-Right Zoning Bylaw, Dec 2014)
- “No zoning ordinance or by-law shall prohibit or unreasonably regulate the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, **except where necessary to protect the public health, safety or welfare.**” M.G.L. c. 40A, § 3.
 - Therefore, solar energy systems **can be prohibited or even unreasonably regulated** where necessary to protect the public health, safety or welfare.
- In the NextSun Energy LLC v. Fernandes case noted on page 6 of the Draft Solar Bylaw and Bess Bylaw, it states that a 2023 MA Land Court decision, affirmed by the Appeals Court in 2025, found that co-located battery storage with solar is protected by M.G. L. c. 40A, § 3.
 - The Land Court in the cited case also found the following Findings of Fact:
 - FOF 40 “I find that a risk of fire exists in the ESS.” (Energy storage system)
 - FOF 41 “A fire in the ESS would occur as a result of thermal runaway. Thermal runaway fires are highly destructive, and once thermal runaway is established it can only be extinguished by being allowed to burn out. Thermal runaway fires require large amounts of water for cooling.”
 - FOF 45 “...I find, that a thermal runaway fire in the ESS would release toxic gasses into the atmosphere, and could necessitate a temporary evacuation for neighbors including the individual residents.”

- FOF 46 “...I find, that firefighting water applied to a fire in the ESS would become contaminated with a variety of toxic compounds, including hydrofluoric acid.”...
 - FOF 56 “... I find, that there is a reasonable scientific certainty that if contaminants reached the groundwater under the ESS, the contaminants would be drawn into Mr. Cogliano’s wells.”
 - FOF 58 “... I find, that if Mr. Cogliano’s wells were to be infiltrated by contaminated water from firefighting of a thermal runaway fire in the ESS, the resulting contaminated well water would be seriously harmful to Mr. Cogliano’s topsoil if used for irrigation.”
- These Findings of Fact by the Land Court and affirmed by the Appeals Court provide the basis and support that BESS are a threat to the public health, safety and welfare.
- The co-location requirements of battery energy storage to solar projects 1 MW and higher now also ties the threat to the public health, safety and welfare to solar projects.
 - In addition, PFAS has been found in the coating of solar panels, as well as lead and cadmium in the panel components.
 - If the panels are damaged, for example by hurricane, the toxic shards will end up in the soil and make their way to groundwater.
- The only battery expert to testify in the above Land Court trial stated that a failure event of the battery energy storage system was likely. Considering the 30 to 40 year expected operation of one of these projects, that translates to more than a 50% likelihood of a failure event during project life. The battery expert also testified that mitigation tactics cannot eliminate the risk of fire or explosion with these systems.
- The 2025 fire at the Tesla battery plant at Moss Landing in CA occurred after corrective actions and extensive system testing. This was the second fire in a little over two years at the facility. It demonstrates that these systems involve catastrophic risk that cannot be eliminated.
- In its published literature, Samsung, a lithium-ion battery manufacturer, has stated under its environmental precautions: “Do not discharge into the drains / surface waters / groundwater.”

- The proposed by right classification of BESS installations on page 7 of the Draft Bylaw for agricultural lands is inappropriate given the hazards associated with the use.
- Hazard and mitigation analysis for large scale BESS systems should take place as part of Site Plan Approval, because part of that analysis considers the proposed location.
- Peer review should be required for large-scale BESS systems due to the hazards involved.
- The Model Bylaws should include prohibition of large-scale solar and BESS in ACECs, aquifers, floodplains, well protection zones, residential areas without fire hydrants, food production agricultural land and high-density evacuation areas including schools, hospitals and facilities for the elderly as these systems are subject to catastrophic risk and cannot be made safe.
- Noise levels
 - Inverter, transformer and cooling system noise levels from solar energy generation or battery energy storage systems are not adequately mitigated under the DEP noise guidelines. These guidelines place a 10 dBA limit over ambient noise and prohibit a pure tone condition when the sound pressure level, at any given octave band center frequency, exceeds the levels of the two adjacent octave bands by three (3) or more decibels.
 - For residential areas, Towns should consider using a 3 dBA or “just noticeable difference” to a 5 dBA noise limit over ambient when dealing with solar or BESS projects. In effect, noise limits over ambient with solar or BESS projects should be more restrictive than the current DEP noise guidelines.
 - Pure tones should also be evaluated using Annex C Sounds with tonal content in ANSI/ASA 12.9-2021/Part 4 or as set forth in 310 CMR 7.10, for greater definition of a potential pure tone condition.
- BESS systems can utilize battery arbitrage which allows 24 / 7 operation.
 - Effectively, the battery system draws power from the grid at cheaper cost overnight and then resells the power back to the grid at a higher price during peak demand.
 - This process allows overnight operation leading to higher noise levels during the lower background ambient noise levels typically found at night.

- Towns should regulate when battery arbitrage will be allowed and under what conditions and mitigation.

Thank you for your consideration of my comments.

Very truly yours,

Joseph Cogliano

Joseph Cogliano

cc by email: Elizabeth.mahony@mass.gov (Commissioner of DOER)
Samantha.meserve@mass.gov (Renewable & Alternative Energy Director)