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October 30, 2020

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

Re: Comments on the ASTGU Straw Proposal

Dear Commissioner Woodcock:

BlueWave Solar appreciates the opportunity to comment on the Agricultural Solar Tariff Generation Units (ASTGU) Guidelines the Department of Energy Resources (DOER, or the Department) issued as part of the SMART 400MW review process. Thank you for your engagement and accessibility throughout the development, administration, and review of the SMART program. We welcome further collaboration in the interest of deploying accessible, clean energy across the Commonwealth and together meeting our emissions reduction and renewable energy goals.

BlueWave is a community solar developer and services provider, which co-developed the first community solar projects in Massachusetts and continues to innovate for the benefit of our customers, landowners, and communities. BlueWave has developed over 135 MW of community and public solar and currently has a pipeline of over 110 MW of dual-use agriculture projects. BlueWave is also a certified B Corporation, which means we believe in the triple bottom line – people, places, and profit – and that we can do good business by doing good.

BlueWave was pleased to see that the Department implemented much of stakeholders' feedback on previous ASTGU proposals into this straw presentation. We thank the Department for upholding many parts of the original ASTGU straw proposal that stakeholders agreed upon in 2019. We look forward to continued engagement and conversation about the best way to successfully deploy dual-use agriculture projects in Massachusetts. BlueWave specifically supports the comments submitted today by CCSA, NECEC, SEBANE, and the American Farmland Trust. We offer these comments in the spirit of reaching our common goals of bolstering the Commonwealth's clean energy resources, food production, and climate change resilience.

Size Cap and Land Coverage

BlueWave understands and shares DOER's interest in a thoughtful rollout of the dual-use program through trial and error, data sharing, and development of best practices. Within this framework, we underscore the need for guidelines that provide market certainty, and encourage parameters that support viable projects. Any limitations placed on project size should be reasonable, easily administered, and comparable with the rest of the SMART program. BlueWave offers the following recommendations on managing project size:

Establish a DC System Size Cap

A DC size cap should be the sole mechanism to govern project size. Managing the dual-use program using this simple metric is straightforward and flexible enough to provide certainty for developers and

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farmers alike to design workable projects according to various drivers of viability. These important but often shifting drivers include battery storage, interconnection, landowner rent requirements, and more. We encourage DOER to set an overall system size cap of 7.5 MWdc for the first tranche of ASTGUs and commit to re-evaluating this cap based on project-level data after the first tranche of projects reach commercial operation.

The guiding principle of a DC cap allows land use impacts to decrease over time, as panels become more efficient and project footprints shrink accordingly. DOER can use the straightforward metric of DC size to continually track system impacts without relying on complicated calculations. After the first tranche of dual-use projects are operational, both the Department and other stakeholders can rely on this data to understand how dual-use design can be optimized to reach our shared goals. Without this straightforward approach, BlueWave is skeptical that any dual-use projects will be built – leaving stakeholders without any opportunity to evaluate impacts and adjust accordingly. Understanding that the overall land use impact of a 7.5MWdc project will shrink over time, BlueWave urges DOER to establish this aggregate DC cap to allow flexibility while giving projects a path to be built within the first tranche. DOER will then have the ability to evaluate an alternative method of limiting project size if needed.

Eliminate the AC:DC Ratio Restriction

In line with our above recommendation, Bluewave encourages DOER to eliminate the AC:DC ratio limitation on dual-use projects. This rule, limiting the DC size to 125% of the AC size, would be duplicative in light of other size restrictions, punitive for projects requiring battery storage in the updated SMART program,¹ and overly complex to administer.

Dual-use projects typically need to be sized at a ratio above 1.5 DC-AC to produce enough excess energy that can be stored in a battery. Since no other projects in SMART are capped based on an AC:DC ratio, limiting the ratio for ASTGUs specifically (much less to a level below typical thresholds for non-storage solar) would render many projects technically unviable. In addition, the battery storage market evolves very quickly and is laden with technical, economic, and strategic complexities that are often best approached on a project-specific basis.

Considering the availability of more straightforward means to regulate project size, such as the overall DC system size cap we have suggested above, creating a regulation that adds further administrative complexity while working against the ultimate viability of projects and related goals of the program does not seem prudent at this time. Because there are other means to regulate project size that are simpler to administer, more predictable for the market to plan around, and beneficial to farmers relying on project-specific optimization, we recommend that DOER eliminate the AC:DC size restriction criteria.

Eliminate the 50% Site Coverage Ratio

Underscoring the need to have a predictable, administratively simple program rule governing project size, BlueWave urges DOER to eliminate the 50% site coverage limit from the ASTGU straw proposal. We

¹ 225 CMR 20.05(5)(k) Energy Storage Requirement. *Solar Tariff Generation Units greater than 500 kW applying for a Statement of Qualification for any available capacity in any capacity block available after the Publication Date must be co-located with an Energy Storage System that meets the eligibility requirements for an Energy Storage Adder pursuant to 225 CMR 20.06(1)(e).*

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believe that this restriction does not reflect the practical solar design footprint or the intent of the dual-use program as DOER has laid out. In addition, the restriction conflicts with agricultural interests and farm viability, potentially discouraging small farms from participating in the program.

DOER, in its SMART regulations, has defined ASTGU projects as those that keep land within their footprint both agriculturally viable and productive.² BlueWave encourages DOER to continue in this spirit of the program by affirming the value of continuing agricultural production beneath and among the solar panels. BlueWave and other industry leaders are committed to maintaining the agricultural viability of dual-use farms in a way that realizes the ultimate best interest for the farmer, land and soil health and conservation, and the Commonwealth's clean energy and food production needs. Program rules already exist to ensure compliance to that end.

We understand that DOER has defined this 50% coverage criteria on the basis of fenced area. We believe, however, that doing so diminishes the agricultural value that ASTGU fencing ultimately brings to a farm, and ultimately undermines broader agricultural interests of farm operations. Fencing is an expensive input for many farmers, and bringing this infrastructure to a farm for free is one of the main benefits solar developers can provide to farmers under the ASTGU program. In the case of one BlueWave project, our partnering animal grazer will size their fenced-in meadow at 150% times the area of the solar footprint. In doing so, the farmer is realizing the most efficient and productive plan for their grazing operation.

The ASTGU straw proposal as written would prevent the above positive outcome from occurring, and has the potential to discourage many mutually beneficial projects from happening at all. In addition, forcing farmers to maintain significant portions of their land as open fields would add costs to farming operations. Farmers would have to maintain two types of equipment and cultivation plans in order to cultivate within the rows of the ASTGU and the nearby open fields as required by the straw proposal. Thus, limiting the coverage criteria by the fenced area does not make practical sense from either a financial or farm management standpoint.

Finally, the coverage requirement as defined on the basis of fenced area would render many smaller farms unviable due to the combination of insufficient acreage, higher fixed costs such as interconnection or battery storage clipping requirements, and insufficient economics for both landowners and developers. Several BlueWave projects – that have either already been approved or are in late stages of development – would fail this test and not qualify for the program. These farms would be left unable to benefit from the financial stability of solar, exposing them to further risk from other forms of development (e.g. housing).

For example, BlueWave's recently approved ASTGU in Dighton is only able to move forward because the project design is large enough to pay down interconnection costs, host battery storage, and make a

² 225 CMR 20.06(1)(d) Agricultural Solar Tariff Generation Units. *1. the Solar Tariff Generation Unit will not interfere with the continued use of the land beneath the canopy for agricultural purposes; 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; 3. the Solar Tariff Generation Unit is a raised structure allowing for continuous growth of crops underneath the solar photovoltaic modules, with height enough for labor and/or machinery as it relates to tilling, cultivating, soil amendments, harvesting, etc. and grazing animals.*

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compelling economic case to the landowner. This project, however, lacks the acreage and DC sizing to comply with the straw proposal as the Department has currently laid out. Under the proposed rules, the landowner would consider an alternative development proposal, such as a housing subdivision, rather than move forward with a dual-use array. Because the ASTGU has been approved, however, the farm will be well-positioned to transition into the next generation of ownership alongside new investments in farm infrastructure, labor, and production diversification.

Should DOER define the 50% coverage requirement on the basis of fenced area, DOER would also need to determine how farms with contiguous parcels under common ownership and heterogeneous land cover would be treated. Regulating projects on this basis would unnecessarily inject further complexity into an already complex program. If DOER must retain the 50% site coverage requirement, BlueWave recommends doing so on the basis of panel area, rather than fenced area. Doing so would avoid many of the complicating factors impacting farmers as we have described above. However, BlueWave underscores our recommendation to eliminate the 50% coverage requirement overall, understanding the mutual commitment of farmers, developers, and the Department to maintaining the agricultural viability of dual-use and conserving land and soil for future generations.

The Department may also consider another option to replace the 50% site coverage requirement: require additional data collection for projects between 2-5MW. These developers and farm managers could commit to efforts such as agronomic research, crop trials, or gathering environmental data. Doing so would add to the robust library of data collected as dual-use projects become operational in Massachusetts. In addition, an added research requirement would hold these 2-5MW projects accountable to responsible farm management, aligning with the Department's goals of limiting land use impacts while implementing the dual-use program.

Determining Compatible Sunlight Requirements

BlueWave thanks DOER for maintaining their original recommendations for ASTGU technical requirements under the current straw proposal, and understands that the SMART regulations, not the finalized ASTGU guideline, determine the underlying farm production requirements. DOER has made clear in the SMART regulations that crop selection and sunlight percentage are important components to ensuring dual-use projects are designed with maximum farm production in mind.³

To this end, BlueWave recommends that DOER publish a list of sample farm plans that are acceptable for projects designed to the minimum standards (e.g. 50% minimum sunlight). These plans can include a non-exhaustive list of crops that are compatible with dual-use design principles. Such a list would provide certainty to both farmers and investors that a farm plan will meet DOER and MDAR approval for the life of their specific project. Further, we recommend that DOER require projects to provide an empirical rationale, case, or data demonstrating why any eventual chosen crop will have sufficient sunlight and meet production requirements.

³ 225 CMR 20.06(1)(d) Agricultural Solar Tariff Generation Units cont. 4. *crop(s) to be grown to be provided by the farmer or farm agronomist in conjunction with UMass Amherst agricultural extension services, including compatibility with the design of the agricultural solar system for such factors as crop selection, sunlight percentage, etc.;*

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BlueWave offers this recommendation to avoid adequately designed projects, that follow the minimum requirements as laid out in the SMART regulations and ASTGU guideline, from being denied approval simply because no data exists to prove whether sufficient sunlight is available or that specific crops are compatible with dual-use. In these cases, applicants should be directed toward the list of pre-approved farm plans and encouraged to implement crop trials that allow for data to be created and collected. We believe that every possible effort should be made towards designing innovative and productive dual-use projects that ensure a farm will not only be viable, but has the ability to thrive. In order to achieve this goal, BlueWave encourages DOER to make the stringent ASTGU qualification requirements accessible and flexible enough for farmers and investors alike to make good-faith decisions about moving forward with dual-use.

Project Qualification and Ongoing Eligibility

BlueWave enthusiastically supports DOER's proposal to create a third-party certification option for projects seeking ASTGU approval. We understand that the intention of this proposal is to provide an alternative yet parallel pathway to the current MDAR approval process. We encourage DOER to ensure that this alternative pathway will create market certainty that both qualification options present a reliable path to adder approval. BlueWave is proud to work with the American Farmland Trust as a trusted advocate in the dual-use and land conservation community, and looks forward to their further establishment as an industry-wide expert.

BlueWave urges DOER to add language in the ASTGU straw proposal that defines a cure process for projects that may come into noncompliance with the dual-use adder in later years. Farmers, project managers, and investors can all benefit from a clear and transparent process for DOER to notify projects at risk of losing the adder and work with the farm manager to rectify any problems. The ultimate goal of this cure period is to bring the project back into compliance with the adder and ensure farm viability for the remainder of the project life.

BlueWave suggests that DOER manage this notification and cure period by defining what warning signs DOER would be able to identify ahead of time. Upon notification, the farm manager can work with the farmer and DOER to ensure continued compliance. The cure period should be long enough and flexible enough for a farmer to manage natural conditions and changing agricultural strategies (i.e., a farmer should not be penalized for an unexpected drought year or for other events beyond their control). All parties should be empowered to work together to protect the intent of the ASTGU program, encourage agricultural production, and ensure farm viability.

Summary

BlueWave urges the Department to further improve and streamline the ASTGU straw proposal in order to achieve the agricultural, clean energy and land conservation goals of the Commonwealth. DOER has an opportunity with the first tranche of its dual-use program to collect data on both agricultural and solar related metrics for the benefit of program longevity and success. We look forward to sharing in this collaborative process and further development of best practices as projects become operational. Please do

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not hesitate to reach out to the BlueWave team with any further questions; we are happy to be a resource for the Department. Thank you for your engagement, attention, and for the opportunity to comment.

Sincerely,

/s/

Eric Graber-Lopez

President, BlueWave Solar

/s/

Mark Sylvia

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