

# ASTGU ANNUAL REPORT

## PURPOSE

This Annual Report form is required to be completed and submitted annually for all projects with the MA Department of Energy Resources (DOER) which received qualification as an Agricultural Solar Tariff Generation Unit (ASTGU) under the SMART program. The form is provided to demonstrate conformance with the general provisions required for ASTGUs in 225 CMR 20.00; in particular pertaining to Section 20.06(1)(d) therein as well as associated ASTGU Guidelines; and specifically pertaining to annual reporting requirements.

The completed form will be reviewed by DOER and the MA Department of Agricultural Resources (MDAR) to determine that the farm is in conformance with all ASTGU provisions in general under the SMART Program, although more specifically to the annual production requirements.

## BASIC FARM INFORMATION

Farm Contact Person Name: Howard Ballou  Farm Owner  Farm Operator

Farm Name: Ballou Farm, Inc.

Legal Structure:  Sole Proprietor  LLC  Corporation  
 Partnership  Other \_\_\_\_\_

Mailing Address: 55 Cedar Street, Douglas, MA 01560

Street Address (if different): N/A

Contact Phone: available upon request Contact E-mail: available upon request

Check all that apply:  Solar facility owner  Landowner  Applicant

Current Type of ASTGU Farm Operation (Check all that apply):

Vegetables  Fruit  Livestock  Poultry  Hay  
 Nursery  Other \_\_\_\_\_

Total Acreage in ASTGU Farm Production: 20.7 acres

Gross Annual Revenue for ASTGU Farm Production: Total \$s N/A

Are any major modifications to the farm business expected in the next 5 years?  Yes  No  
(Check all that apply.)

Business Legal Structure  Operation Type  Expansion  Diversification  
 Retirement  Sale  Subdivision  Other \_\_\_\_\_

## BASIC SOLAR PROJECT INFORMATION

Solar System Company Owner: BWC Whitin Reservoir, LLC

Solar System Company Address: 116 Huntington Ave, Suite 601, Boston, MA 02116

Solar Company Contact Person/email/tel#: Tatiana Prevala, [assetmgmtteam@bluewave.energy](mailto:assetmgmtteam@bluewave.energy),  
(617) 256-2120

**ASTGU Project Start-Up/History Information:**

Date ASTGU Approved by DOER: Pre-Determination Application Approval: December 28, 2020

Date Solar Portion of ASTGU Project Commenced Construction: Notice to Proceed: May 1, 2023; Construction Start (Mobilization): May 5, 2023

Date Solar Portion of ASTGU Project was Completed & Operational: Permission to Operate received April 18, 2025; Incentive Start Date: June 13, 2025; Substantial Completion of Solar Array: July 8, 2025; Final Completion of Solar Array: TBD

Date Original Agricultural Portion of the ASTGU Project Commenced: Fall 2025

Date Original Agricultural ASTGU Portion of Project Harvested/Sowed Products: N/A

How many complete years, that is both solar and agricultural production, has the ASTGU been in operation? Less than 1 year

**SOLAR ARRAY DESIGN – PLEASE PROVIDE AS-BUILT SYSTEM INFORMATION**

Please provide the following information regarding the solar array design:

Nameplate capacity AC (in MW): 2 MWAC (Note: 1 MW=1000 kW)

Expected annual generation AC (MWh): 5,227 MWh (Note: 1 MWh=1000 kWh)

Acreage of farmland over which array is to be installed: 15.7 acres, 20.7 within fence

System type:  Fixed  Tracking  Other \_\_\_\_\_

Height of lowest panel edge (in feet): 6.88

Height of lowest elevated horizontal mounting (in feet): 10 ft

Type of mounting (mono poles, racking, etc.): Driven I-beam piles with polyethylene frost sleeves.

Description of materials and process to be used for ground penetration: The site was surveyed and markers were placed at each I-beam location. An excavator was then used to dig a hole around the pile location. Then, a hydraulic pile driver on tracks is used to drive the I-beams into the center of the excavated holes. Then, the frost sleeves are added to the I-beam and soil is backfilled.

Number of panels, capacity per panel, and panel spacing: 6,024 modules at 580W capacity, mounted in rows with a 26' pitch (row center-to-row center) with 18'1" interrow spacing (panel edge-to-panel edge)

## AGRICULTURAL PLAN FOR DUAL-USE AREA

Planned agricultural use, Year 1. Check all that apply.

- Vegetable, fruit, grains, for human consumption
- Hay
- Livestock production
- Poultry production
- Horticulture
- Floriculture
- Aquaculture
- Other, please describe: \_\_\_\_\_

Please fill the Crop Table results following this section for horticulture, flowers, vegetable, fruit, grain, and hay crops for your present year of operation. Fill out one Crop Narrative for each crop, detailing anticipated crop management (planting, irrigation, soil amendments, harvesting) and equipment to be used. **Crop Table – Current Season** follows this section. Also, please also fill out a **Crop Table – Next Season** and corresponding narrative at the end of this section with your best information available.

Please fill out the Grazing Table results following this section for livestock and poultry production for your present year of operation. Please also fill out the Grazing Narrative, detailing anticipated pasture and animal management and equipment to be used. **Grazing Table – Current Season** follows the Crop Table section. Also please fill out a **Grazing Table – Next Season** and corresponding narrative at the end of this section with your best information available.

### **Additional comments regarding agricultural production for Year 1:**

How did the Agricultural Production perform versus expectations? Please explain why/why not if you can:

As expected, no agricultural production occurred since this year's activities focused on amending the soil and establishing a good cover crop.

Did you plant the crops/graze the animals as you originally intended when your Pre-Determination Application was approved? If not please explain.

Yes, this season's agricultural activities followed the proposed year one plan within the PDA which included prepping and seeding the soil with the forage crop for 2026. Although pollinator strips were proposed for the areas directly under the panels, alsike clover will be used in the forage crop seed mix which will serve as a pollinator resource on site.

Were the products marketable as anticipated? Please explain how the production values (weight/bushels etc.) were determined.

As anticipated, no crop was harvested this year since the emphasis was on soil health and agricultural infrastructure installation in preparation for commercial production in 2026.

What occurred during the current season that wasn't anticipated? Positive & Negative.

A lot of work was executed this season to address the severe soil erosion that occurred in December 2024 due to two unprecedented back to back rain events that resulted in over 9 inches of rain. In addition to the baseline soil amendments, manure and bedding were collected throughout the year and composted off site in order to be spread on the site, adding organic matter back to the soil. Water piping and water storage tank will be installed to accommodate the site's future water demands throughout the varying elevation.

What Changes/Modifications do you expect to make to improve on production if needed?

Ongoing work is being conducted to complete the installation of the buried water supply lines, internal electric fencing and livestock shelter. Continued application of organic matter to increase soil health is also expected.

Do you expect to grow the same crops on the land in years 2 and 3? Briefly describe your crop rotation plan and what you expect to be growing on the land for the next 5 years Will the same equipment be used? If not, is current array design compatible with future crop management needs and equipment?

In year two (2026), the plan is to begin commercial production of hay on site while fostering soil health and establishment of the perennial orchardgrass and clover forage mix. In addition to harvesting hay, a small herd of cattle will be grazed in the fall of year two. In years three onward, there will likely be more grazing rotations in lieu of a second or third hay cut based upon soil and market conditions. Pumpkins will also be grown in years two through five on specific portions of the site using minimal or no-till methods (ie. direct hand seeding). At least one chicken tractor is planned to be used on site, following the cattle's grazing period, within years 3 through 5.

<b>Table A: Crop Production – Current Season</b>					
<b>Crop</b>	<b>Area planted (Row length and width or acreage, as appropriate)</b>	<b>Planting date(s) (approximate)</b>	<b>Harvest date(s) (approximate)</b>	<b>Expected productivity, total pounds harvested with dual use</b>	<b>Actual productivity, pounds, with dual use</b>
Cover crop (Fuzz & Buzz seeding mix with annual ryegrass)	20 acres	Seeding occurred in the spring of 2025	N/A	N/A	N/A

## **CROP NARRATIVE – Current Season**

*Please detail the crop management for this past season, including approximate **dates** and **equipment** used. The purpose of this form is to provide empirical data regarding compatible equipment usage and crop management needs. If you need additional space, please include a typed attachment labeled “Crop Narrative.”*

Crop: Cover Crop (Fuzz & Buzz seeding mix combined with annual ryegrass)

Planting Plan: The cover crop was seeded in spring of 2025 using a Primary seeder.

Soil Amendment Plan: Pelletized lime was spread this Fall at a rate of 2,000lbs/acre using a 50-horsepower tractor and rotary spreader.

Cultivation Plan: The cover crop was mowed with a rotary mower in September to control weeds and stimulate vegetative growth.

Irrigation Plan: No irrigation was necessary for the cover crop. An agricultural well was installed to serve as a water source on site in the event that irrigation is needed for vegetables.

Pesticide/Herbicide Plan: No pesticides or herbicides were used on the site this season.

Harvest Plan: No harvest/removal of the cover crop was performed as the goal was primarily to improve soil health.

<b>Table B: Grazing Production – Current Season</b>							
<b>Type(s) of animal grazed</b>	<b>Area grazed (acreage)</b>	<b>Grazing pressure # animals per acre</b>	<b>Purpose (e.g. meat, dairy, eggs)</b>	<b>Grazing period(s)</b>	<b>Harvest date(s) if applicable</b>	<b>Expected productivity with solar array</b>	<b>Actual productivity with solar array</b>
N/A							

## GRAZING NARRATIVE – Current Season

*Please detail the past season animal and pasture management, including **dates** and **equipment** used. The purpose of this form is to provide empirical data regarding compatible equipment usage and production needs. If you need additional space, please include a typed attachment labeled “Grazing Narrative.”*

Type(s) of Animals Grazed: N/A

Pasture Management Plan: List any anticipated seeding, soil amendment, irrigation, pesticide, mowing, etc., including approximate dates and equipment used.

The site was left in a cover crop this year to promote soil health.

Animal Management Plan:

For each type of animal grazed, describe management regarding housing/shelter, water source, fencing, movement, disease treatment, harvest, etc. that was carried out within the solar array area. Describe equipment used in these activities.

No grazing of livestock occurred since the aim of this season was to promote soil health which ultimately will promote the long-term success of the forage crop stand.

Describe any modifications to the solar array design that were made in order to reduce the risk of animal damage to the solar array, or risk of electrocution to animals.

The array is raised 10’ at the torque tube and DC conductors are secured along the torque tube at this height. There is no overhead CAB system on this site. Instead, where conduit travels out of the line of the array rows, wires are encased in PVC conduit and buried more than 3’ deep to reduce any risk of electrocution of animals or farmers during agricultural activities. All equipment that must be grounded is grounded and higher voltage equipment such as transformers are enclosed within a fence. The array is surrounded entirely by its own 8’ tall fixed-knot woven wire fence and two electrified high-tensile wires are being added to enhance the safety of the livestock in the array.

<b>Table A: Crop Production – Next Season</b>					
<b>Crop</b>	<b>Area planted (Row length and width or acreage, as appropriate)</b>	<b>Planting date(s) (approximate)</b>	<b>Harvest date(s) (approximate)</b>	<b>Expected productivity, total pounds harvested without dual use</b>	<b>Expected productivity, total pounds, with dual use</b>
Orchardgrass and clover mix (hay crop info listed within the grazing narrative)	± 6 acres	The array will be seeded in 3 sections according to the provided Site Plan Attachment.  Section 1: Early Winter 2025 Section 2: March/April Section 3: Early July	Harvest of existing forage (Fuzz & Buzz seeded during construction) will occur in Early July	10,500 lbs (215 50lb bales)	6250 lbs (125 50lb bales)
Pumpkins	± 1 acre	Early June	Late September to Early November	1,750 lbs	1,300 lbs

## **CROP NARRATIVE – Next Season**

*Please detail the crop management planned for next season, including approximate **dates** and **equipment** used. The purpose of this form is to provide planned data for the upcoming season regarding compatible equipment usage and crop management needs. If you need additional space, please include a typed attachment labeled “Crop Narrative.”*

Crop: Pumpkins

Planting Plan: Direct seeding of the pumpkins is planned to occur in early June on approximately one acre of the array. Two seeds will be planted every six to eight feet then thinned after the first true leaf forms to allow for proper spacing between the plants.

Soil Amendment Plan: The soil will be fertilized by hand shortly before planting using either a 10-10-10 or 13-13-13 NPK granular fertilizer and side dressed throughout the season as needed.

Cultivation Plan: The cover crop within the pumpkin acreage will be mowed prior to planting. Small areas will be cultivated by hand where the pumpkin seeds are planned to be planted. Weed management will occur throughout the growing season using mechanical (weed whacker) and/or chemical means.

Irrigation Plan: Buried water lines will be installed in December 2025 or January 2026. While there's no intention to irrigate the pumpkins, water on site would be available if needed.

Pesticide/Herbicide Plan: Pesticides and herbicides will be applied as needed following the New England Vegetable Management Guide, UMass extension recommendations and product labels.

Harvest Plan: Harvest of the pumpkins is expected to occur between late September and early November. Given that this will be year one of a pumpkin trial, we are expecting a modest yield. Harvest activities will be performed by hand by cutting the stem and gathering the pumpkins into bins. The necessary equipment for harvest is compatible with the array design. The pumpkins will be sold to local markets.

<b>Table B: Grazing Production – Next Season</b>							
<b>Type(s) of animal grazed</b>	<b>Area grazed (acreage)</b>	<b>Grazing pressure # animals per acre</b>	<b>Purpose (e.g. meat, dairy, eggs)</b>	<b>Grazing period(s)</b>	<b>Harvest date(s) if applicable</b>	<b>Expected productivity without solar array</b>	<b>Expected productivity with solar array</b>
Cattle	± 6 acres	4 cattle total (1 cow for every ~1.5 acres)	Meat	Late summer to early fall	N/A	N/A	N/A

## GRAZING NARRATIVE – Next Season

*Please detail the next season animal and pasture management, including **dates** and **equipment** used. The purpose of this form is to provide planned data for the upcoming season regarding compatible equipment usage and production needs. If you need additional space, please include a typed attachment labeled “Grazing Narrative.”*

Type(s) of Animals Grazed: Cattle

Pasture Management Plan: List any anticipated seeding, soil amendment, irrigation, pesticide, mowing, etc., including approximate dates and equipment used.

The site has been divided into three sections (Please see attachment A) for forage crop seeding. For each of the three sections, composted manure and hay will be spread then incorporated into the soil using a tractor and disc harrow. Planting the orchardgrass and clover seed mixture at a rate of 20 lbs/acre will be conducted using a rotary spreader. This will occur in early Winter 2025 for section 1, in March/April 2026 for section 2 and in early July 2026 for section 3. Lime applications at a rate of 2,000 lbs/acre are planned for spring 2026 and fall 2026 to raise the soil pH to 6.5. A starter fertilizer mix, likely 10-10-10 NPK may also be applied in the early spring 2026 to support the new forage plantings. One cut of section 3 is planned for early July 2026, prior to the replanting of section 3 and overseeding of sections 1 and 2. As the forage stand will still be maturing in the 2026 growing season, a modest hay yield of 6,250 lbs is expected. Understanding that agricultural plans are dynamic and subject to weather patterns, this is the initial plan for 2026 but may be subject to change.

Animal Management Plan:

For each type of animal grazed, describe management regarding housing/shelter, water source, fencing, movement, disease treatment, harvest, etc. that was carried out within the solar array area. Describe equipment used in these activities.

Four cows will be brought to graze a six acre subset of the site in the late summer of 2026. Portable electric fencing will be used to partition this area of the site for rotational grazing. Installation of livestock shelter as well as buried water line/aboveground water tank are planned to be completed by spring 2026. Animal health is a priority, and a licensed vet will be engaged as needed. The cows are expected to calve sometime in the early fall timeframe. The calves will remain with Ballou Farm until they reach full maturity in two years and will then be harvested for meat. To grow the herd, no cows will be harvested in 2026.

Describe any modifications to the solar array design that were made in order to reduce the risk of animal damage to the solar array, or risk of electrocution to animals.

Electric internal fencing will be installed to fortify the existing livestock fences as well as to segment the pasture into smaller rotational grazing areas.

## **Waiver for Decreased Yield**

### **i. Waiver for Decreased Yield**

Due to unforeseen circumstances, such as but not limited to weather events, pests, or change in crops, the projected agricultural yield for any given year may be lower than stated in the agricultural plan or previous year's annual report. In these instances, an applicant can request a waiver to the Department for the decreased yields. The applicant must demonstrate to the satisfaction of the Department, and in consultation with MDAR, that a waiver is warranted for good cause. Waiver requests must be submitted by December 1st of the applicable calendar year and sent to [DOER.SMART@mass.gov](mailto:DOER.SMART@mass.gov).

### **ii. Failure to Report**

If the ASTGU fails to submit an annual report, the Department may declare the project ineligible for the ASTGU adder for one year. If the annual report is not completed for a second year, then the Department may permanently disqualify the ASTGU from continuing to receive the ASTGU Adder for the remainder of the STGU's tariff term.

**SIGNATURES AND ATTESTATIONS**

Prior to submitting the Pre-Determination Form, please read and sign as directed below.

Landowner

I hereby certify that I have personally examined and am familiar with the information submitted herein, and, based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.



\_\_\_\_\_  
Signature of Landowner

12/01/25

\_\_\_\_\_  
Date

Farm Operator and Landowner

I/we hereby certify that the information submitted regarding the current farm conditions and practice and the Agricultural Plan for the Dual-Use Area is accurate and complete to the best of my/our knowledge and intentions, and that I/we have engaged with the University of Massachusetts Amherst Clean Energy Extension and thereby its agricultural extension service to review the Agricultural Plan and its compatibility with the solar array structures and shading. Further, I/we agree, conditional on being provided eligibility to the SMART program as an ASTGU, to submit a report, through a template provided by the University of Massachusetts Clean Energy Extension, annually throughout the duration of the SMART incentive with ASTGU adder, on the operations and productiveness of the solar array and agriculture along with any changes to the Agricultural Plan for the following year. I/we understand that failure to maintain productive agricultural activities and annual reporting may result in the disqualification of the facility as an ASTGU in the SMART program.



Signature of Farm Operator

11.25.2025  
\_\_\_\_\_  
Date



\_\_\_\_\_  
Signature of Landowner

12/01/25

\_\_\_\_\_  
Date

Solar Facility Owner

I hereby certify that the information submitted regarding the Solar Array Description and inputs and outputs of the Shading Analysis is accurate and complete to the best of my/our knowledge and intentions.

A handwritten signature in blue ink, appearing to read 'D Collum', is written over a horizontal line.

Deborah Collum  
Authorized Signatory  
Signature of Solar Facility Owner

Date: December 1, 2025