



## CONNECTICUT DEPARTMENT OF AGRICULTURE

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*Office of the Commissioner**An Equal Opportunity Employer*

May 18, 2022

Melanie A. Bachman  
 Executive Director  
 Connecticut Siting Council  
 10 Franklin Square  
 New Britain, CT 06051

Re: Community Power Group – 24 Middle Road, Ellington, proposed 4-Megawatt AC solar project

Dear Executive Director Bachman:

Pursuant to 16-50k(a) of the Connecticut General Statutes, we have reviewed the above cited project with respect to agricultural impacts, specifically, to determine whether "...such project will not materially affect the status of such land as prime farmland..."

This project will be located at 24 Middle Road, Ellington, on land owned by Phrumb Properties, Inc. The property in question consists of a single parcel which is 68 acres in size, all of which contains prime farmland soils. The solar project footprint is estimated to be 20.3 acres (approximately 30 percent of the prime farmland on the parcel). The project footprint is currently used to grow vegetable crops including corn and pumpkins. The approximately 47 acres outside of the site will continue to be farmed by the owner or leased to another farmer.

In a letter to the Department of Agriculture (DoAg), dated June 4, 2020 and follow up letters dated January 31, 2022 and May 3, 2022, the developers (Community Power Group or CPG) have agreed to implement the following agricultural practices on the site:

- 1) Master Beekeeper Mark Creighton of the Connecticut Agricultural Experiment Station will establish 10 apiaries on the site to conduct a pollinator research project. CPG will plant a pollinator friendly seed mix within the project area as well as a wildflower seed mix around the perimeter of the fenced solar array.
- 2) CPG has created a Sheep Pasture Rotation and Grazing Plan for the site. CPG will establish vegetative cover throughout the fenced project area. Species of plants will include but are not limited to Anise Hyssop, Nodding Wild Onion, Wild Columbine, Butterflyweed, Purple Prairie Clover, Blue False Indigo, Purple Coneflower, Stiff Goldenrod, Black Eyed Susan, Smooth Aster, Spiderwort, Golden Alexanders, Bergamot, Narrowleaf Mountain Mint, New England Aster, Sideoats Grama, and Little Bluestem. CPG will install three fence lines within the project area and will purchase five units of poly tape fencing to create five paddocks.

The proposed timeline provided in the plan will allow sheep on the site beginning in September 2024. The stocking rate calculation provided in the plan will allow for approximately 11 sheep to graze the property. CPG has created a Farmlink posting to

solicit interested sheep grazers. CPG will execute a grazing contract in the Summer of 2022.

As stated on previous projects incorporating this co-use approach, I want to stress to the Siting Council that there are certainly other considerations in a co-use such as this one which includes livestock. For example, developers, in partnership with the farmer(s), will need to consider how sheep will coexist with the solar panels, the site fencing, cable trays, etc. The developers will also be expected to provide the necessary infrastructure to accommodate housing, feeding, and watering to support general herd management practices. Developers need to ensure there is an adequate plan for care and management of the sheep and training for anyone working at the site to ensure that both worker and animal welfare is effectively managed. It will also be necessary to ensure there is adequate signage/security in and around the site noting that live animals are grazing on the property.

- 3) CPG has identified a Connecticut based vegetable grower to utilize an approximately 10,000 square foot area of land to grow crops beginning in 2024. CPG will negotiate a formal contract with this grower or another grower if necessary.

Based on statements provided in CPG's letter dated, January 21, 2022, the only significant ground disturbance caused by the project will be an access road approximately twenty feet in length extending from Middle Road south to the solar array. There will be no grading, cutting or filling, topsoil removal, or other actions associated with the project's installation and ultimate deconstruction after 20 to 30 years.

Based on preliminary information provided to DoAg (enclosed), and the successful implementation of the co-uses and continuing farming activities described above, the Department of Agriculture concludes this project will not materially affect the status of project land as prime farmland. This determination is conditioned upon the co-uses described above operating on the project site for the life of the project. The Department of Agriculture will continue to monitor the proposed project and should changes or additions to the proposal raise concerns to the Department, we reserve the right to modify our position on this project, including opposing it, as detailed plans are provided by the developers.

If you have any questions, please feel free to contact Holly Lalime of my staff. Holly can be reached at [Holly.Lalime@ct.gov](mailto:Holly.Lalime@ct.gov) or at (860) 969-7053.

Sincerely,



Bryan P. Hurlburt  
Commissioner

Enc.

Cc: Katie Dykes, Commissioner, Department of Energy and Environmental Protection  
Jessica Anderson, Community Power Group



**Community Power Group**  
**Agricultural Mitigation Plan**

**Submitted to the Connecticut Department of Agriculture**



May 3<sup>rd</sup>, 2022

Department of Agriculture, State of Connecticut  
Attention: Jaime Smith, Bureau Director;  
Holly Lalime, Environmental Analyst  
450 Columbus Blvd, Suite 701  
Hartford, Connecticut 06103

**Re: Solar Energy Project Considerations, 24 Middle Road 4MW Solar Facility, Ellington, CT**

Dear Ms. Smith and Ms. Lalime,

Community Power Group (“CPG”) is pleased to present the following materials in response to the Connecticut Department of Agriculture’s April 1<sup>st</sup> request for information in CPG’s agricultural mitigation plan for the 24 Middle Solar Facility. CPG has taken several actions over the past two years to develop a mixed-use agricultural plan that will contribute to the robust offsetting of ~20 acres of prime farmland taken out of production by the proposed solar facility.

In early 2021, CPG formed a relationship with CAES Master Beekeeper Mark Creighton, who has committed to establishing 10 apiaries on-site, with beekeeping efforts driven by key research questions. Additionally, CPG has had discussions with Agrivoltaic Solutions LLC (“AVS”) concerning feasibility of rotational sheep grazing at the project site. Per standard CPG practice, native pollinator-friendly seed mixes will be distributed throughout the project site in order to establish a vegetative cover that is nutritious for sheep. Finally, CPG has communicated with the Town of Ellington about the proposed project, siting considerations, and the possibility of establishing a community garden.

Given CPG and Connecticut DoA’s February 24<sup>th</sup> discussion related to agricultural mitigation at the 24 Middle Road site, CPG created a Connecticut FarmLink profile in pursuit of partnering with a small-scale vegetable farmer, as well as a sheep grazer. A Connecticut-based vegetable gardener expressed interest in developing and tending to a 10,000 square foot garden beginning in the 2024 season; please find Mr. Ryan’s letter of support for the project attached.

Per in-house research and preliminary discussions with AVS, CPG has developed a site-specific rotational grazing plan. Please find this plan attached. CPG continues to solicit qualified grazing partners on Farmlink as well as through AVS’s connections to established grazers (see attached documentation). The path forward is to conduct a competitive solicitation for a sheep grazer, unless the FarmLink endeavor connects us to a grazer ready to commit to our project plan first. CPG is conscious of selecting a grazer that is both knowledgeable and committed to solar sheep grazing, but also has a competitive price to ensure long term project viability, and expects to execute a grazing contract in Summer 2022.

Please let CPG know if additional information is needed, or if the Department has any questions. CPG looks forward to hearing your feedback; thank you!

Sincerely,  
Amberli Young, CPG



## **Sheep Pasture Rotation and Grazing Plan for 24 Middle Solar Facility in Ellington, Connecticut**

Prepared by: Community Power Group, LLC  
5636 Connecticut Ave NW #42729  
Washington, DC 20015  
202-844-6423



## Sheep Rotation and Grazing Plan for 24 Middle Solar Facility

24 Middle Road, Ellington CT

### Summary

The purpose of this document is to present a specific sheep grazing plan for the 24 Middle Solar Facility to be constructed in Ellington, Connecticut, on a parcel owned by PHRUMB Properties, Inc. The solar facility is expected to be installed in the fall of 2023 after the conclusion of the growing season, which will include an approximately 20.3 acre fenced-in panel area available for sheep grazing starting in 2024.

This site is ideal for sheep grazing in conjunction with solar for the following reasons:

- The developer of the solar project, Community Power Group, LLC (“CPG”), makes it a standard business practice to establish pollinator-friendly seed mixes of grasses and flowering plants native to respective project areas, which offer maximal nutrition for sheep
- The site is surrounded by forested areas and other farm fields, protecting the sheep from any neighbors or noxious commercial uses
- The site is largely flat, offering a clear view of the entire facility for the grazer
- Ellington, Connecticut gets approximately 50 inches of rain per year, offering a prime growing environment for the vegetative cover

The use of rotational sheep grazing is also beneficial to the solar facility itself, in that it serves as a vegetation control measure to prevent panel shading, manage vegetation growth, remove invasive species, and control erosion of topsoil. Establishing a sheep grazing project is extremely beneficial to this project in ensuring that the highest levels of energy production are achieved throughout the lifetime of the solar facility. The solar maintenance team will work in concert with the sheep grazer to support these activities.

This project will utilize a rotational grazing system in order to maximize the benefits of the sheep grazing on the establishment and growth of the vegetative cover. The grazer will utilize portable electric fencing to establish paddocks for the sheep to graze. Within the 20.3 acre solar project, it is expected that five (5) paddocks will be created within the fenced in area. The grazer will establish these paddocks as needed as the sheep exhaust the existing growth.

### Establishment of Vegetative Cover

CPG will establish a vegetative cover throughout the fenced project area primarily utilizing plant species that are native to Connecticut. CPG will seed the site prior to construction activities, in order to properly prepare the land to host sheep come the 2024 season. The site will be seeded

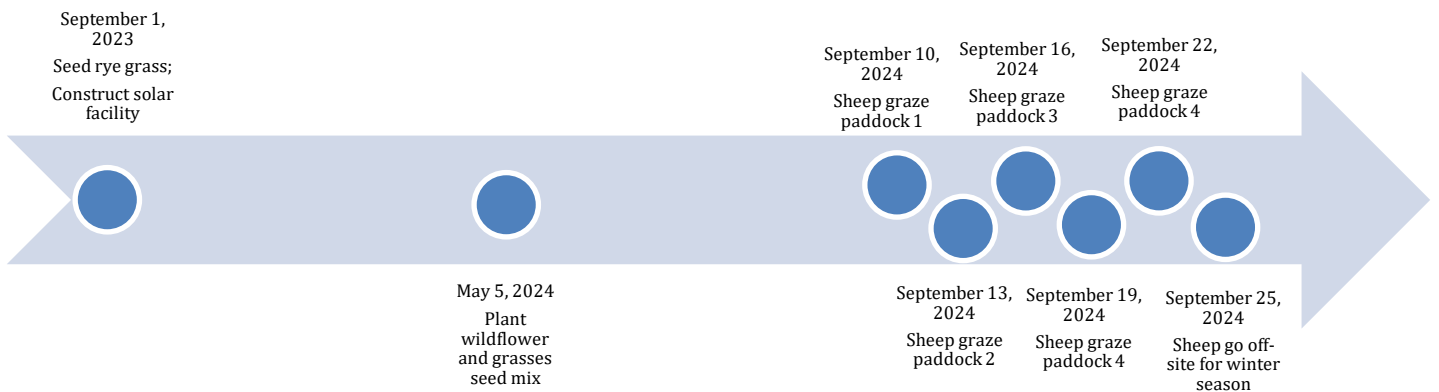


with rye grass in the fall of 2023, in order to contribute to ease of construction and the outset of grazing sheep in 2024.

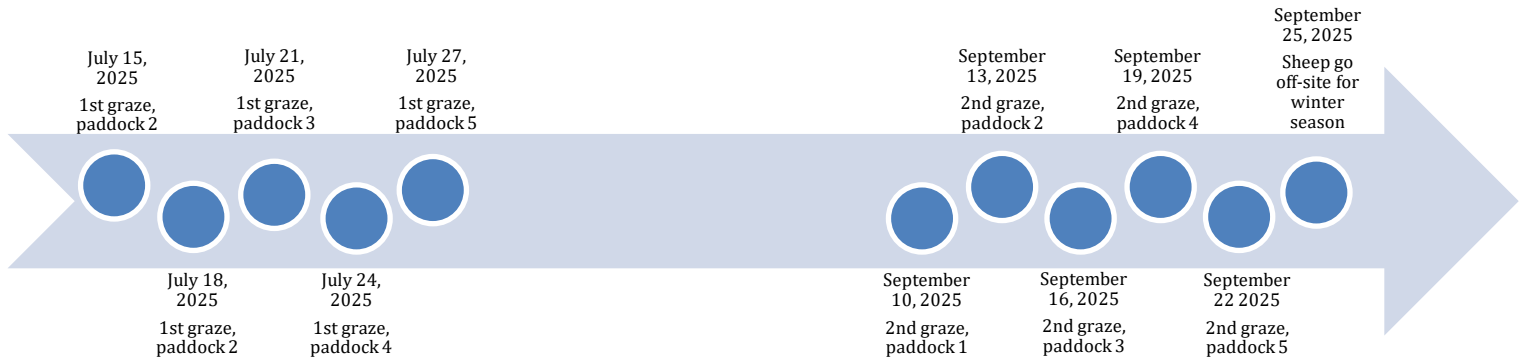
The soils located at 24 Middle Road include wapping very fine sandy loam (6.8 acres, 39.9%) and Narrangansett silt loam (10.2 acres, 60.1%). With these well-drained, sandy loam and silt loam soils, there are several native wildflowers and grasses that could work well to establish a vegetative cover at the 24 Middle site. CPG will accumulate and later distribute a wildflower and grasses seed mix including, but not limited to, the following plant species (given by common name): Anise Hyssop, Nodding Wild Onion, Wild Columbine, Butterflyweed, Purple Prairie Clover, Blue False Indigo, Purple Coneflower, Stiff Goldenrod, Black Eyed Susan, Smooth Aster, Spiderwort, Golden Alexanders, Bergamot, Narrowleaf Mountain Mint, New England Aster, Sideoats Grama, and Little Bluestem.

Further, CPG anticipates planting alfalfa throughout the fenced solar project area, which is projected to do well in the Ellington climate given its adaptability to a wide range of growing conditions. The alfalfa will provide nutritional value to the sheep, and will be a practical supplement to the aforementioned list of native wildflowers and grasses. Further, CPG intends to incorporate a few climbing vegetables into the solar array area, including bush beans, soybeans, and peas. CPG is aware of the possibility that these species will not proliferate; however, growth rate aside, the climbing vegetables will supplement the sheep’s diet and contribute to soil health. Around the perimeter of the fenced solar array, CPG will distribute the wildflower seed mix, which will also support the pollinators which will be established outside of the array area.

**Proposed Timeline, Year 1**



**Proposed Timeline, Years 2+**



**Paddock Area**

The 24 Middle Solar project was evaluated for rotational sheep grazing in accordance with Community Power Group’s proposed site plan, which includes the fenced solar project footprint of 20.3 acres. Per standard CPG practice, the fence constituting the perimeter of the solar facility will be a traditional game fence. Within the 20.3 acre project area, five paddocks will be designated, which will serve as discrete grazing units. The paddocks will be created using electric poly fencing (i.e. poly tape), a portable fence that is prevalent in rotational grazing arrangements. CPG has selected this fence given its ease in functionality, and appeal to grazers given its adaptability to a range of agricultural environments.

Three fence lines will be installed in order to create the 5 discrete paddocks within the solar project area. Fence line 1 is approximately 770 feet in length, fence line 2 is approximately 770 feet in length, and fence line 3 is approximately 860 feet in length. The selected fencing, poly tape fencing, is sold in units of 500 feet in length, and therefore CPG will purchase five units for the purposes of erecting the five discrete paddock areas.

The 24 Middle Solar site was divided into 5 paddocks based on a number of factors, including but not limited to the proposed solar project layout and corresponding solar modules, racking and associated equipment, as well as anticipated plant species to be interspersed in open rows. See Figure 1 for a project site layout depicting the five proposed paddocks and fence lines.



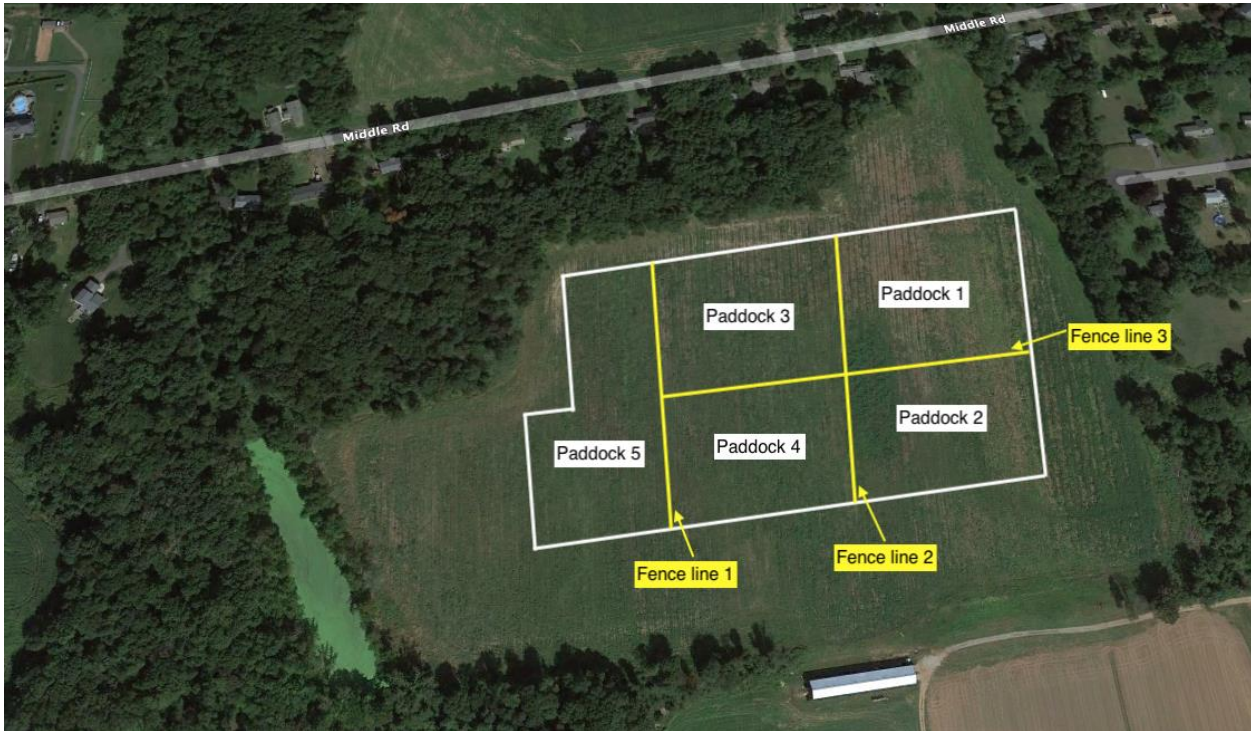


Figure 1. 24 Middle Road Solar Project Site Layout with discrete paddocks and fence lines identified. Note that this is a preliminary depiction and is subject to change.

- Paddock 1: 4.1 acres
- Paddock 2: 3.9 acres
- Paddock 3: 4.1 acres
- Paddock 4: 3.9 acres
- Paddock 5: 4.3 acres

### **Animal Quantity and Rotation**

The quantity of sheep (i.e. the flock) has been calculated based off of available acreage designated within the solar project area for grazing, over a time period of 60 days. The total number of sheep per acre, or the “stocking rate,” assumes a full rotation, meaning that there will be an adequate number of sheep present on a paddock basis, not including rest days. Sheep will move from one paddock to the next every 3 days. The table below portrays the stocking rate calculation for the 24 Middle Solar site, and is subject to change based on weather and vegetative growth conditions (as to be determined by the sheep grazer).



Table 1. Grazing Plan 24 Middle Solar Facility

	<i>Item</i>	<i>Paddock 1</i>	<i>Paddock 2</i>	<i>Paddock 3</i>	<i>Paddock 4</i>	<i>Paddock 5</i>	<i>Total</i>
Acreage	Array size, ac						20.3
	# of paddocks						5
	Paddock size, ac	4.1	3.9	4.1	3.9	4.3	4.06
	Rest period, days						45
	Days in paddock						15
Sampling & analysis	Vegetative cover: %, ac	80% 3.2	80% 3.1	80% 3.2	80% 3.1	80% 3.4	80% 16.0
	DM/ac, lbs	1,300	1,300	1,300	1,300	1,300	1,300
	DM/paddock, lbs	4,160	4,030	4,160	4,030	4,420	20,800
	Utilization rate: %, lbs	50% 2,080	50% 2,015	50% 2,080	50% 2,015	50% 2,210	50% 10,400
	Total paddock DM, lbs	2,080	2,015	2,080	2,015	2,210	10,400
Feed intake	Average sheep weight, lbs						170
	DM Intake: % BW, lbs						3.5% 5.95
Totals	<b>Total acreage</b>						20.3
	<b>Average paddock size, ac</b>						4.06
	<b>Total sheep, per paddock</b>						11.0
	<b>Stocking rate</b>						2.7

Assumptions utilized in Table 1: vegetative cover of 80% within solar project area; dry matter of 1,300 pounds on a per acre basis; utilization rate of 50% (given plant density in excess of 75%); average dry matter intake of 3.5% and sheep weight of 170 pounds; Connecticut average stocking rate of 2.5 to 3 sheep per acre; expert recommended 2 to 3 day sheep rotation per paddock.

**Table 1 Analysis and Summary**

The vegetative cover has been estimated at 80%, given that plant species described in section ‘Establishment of Vegetative Cover’ above will likely not be at the point of maturity until year 2 or 3. Upon inception of the project, the vegetative cover will be estimated on a per-paddock basis, and the discrete percentage estimates will be monitored and adjusted accordingly. Further, samples will be taken of vegetative growth, which will be analyzed in order to determine a refined sheep stocking rate. The American Solar Grazing Association (“ASGA”) offers extensive materials



and recommendations relating to solar grazing mechanics, and CPG will utilize such resources when refining stocking rate calculations per maturation of proposed organic matter on-site.

The proposed grazing rotation is intended to suffice as a preliminary guide to the flock grazer (who CPG will select through a competitive procurement process in 2022); while the detailed grazing management plan is a necessary component in guiding the sheep grazer, it is expected that revisions will be made upon commissioning of the solar facility and outset of grazing operations. Further, there will be variability in grazing rotation throughout the year in accordance with the seasons (e.g. increase in stocking rate following bouts of heavy rainfall between April and June), and thus Table 1 ought to be used as a preliminary guide.

Reflective of the calculations in Table 1, it is estimated that approximately 11 sheep will graze the five paddocks created within the 20.3 acre solar facility project site, at a stocking rate of 2.7 sheep per acre. This is based on an assumption of 3 grazing days per paddock, and 45 resting days.

## References

Kochendoerfer, Niko and Agrivoltaic Solutions LLC. November 2020. Sheep Pasture Rotation and Grazing Plan for the Verogy Bristol Solar One Project in Bristol, CT. [https://portal.ct.gov/-/media/CSC/3\\_Petitions-medialibrary/Petitions\\_MediaLibrary/MediaPetitionNos1421-1430/PE1421/DevandMgntPlan/Exhibit-B-BristolSolarOne-GrazingPlan.pdf](https://portal.ct.gov/-/media/CSC/3_Petitions-medialibrary/Petitions_MediaLibrary/MediaPetitionNos1421-1430/PE1421/DevandMgntPlan/Exhibit-B-BristolSolarOne-GrazingPlan.pdf)

ASGA, Solar Grazing Mechanics. <https://solargrazing.org/solar-grazing-mechanics/>

Raucher, Kelsie and Kintzel, Ulf. October 2018. Rotational Grazing: How Often Should I Rotate? *Small Farms, Cornell College of Agriculture and Life Sciences*. <https://smallfarms.cornell.edu/2018/10/rotational-grazing-how-often-should-i-rotate/>