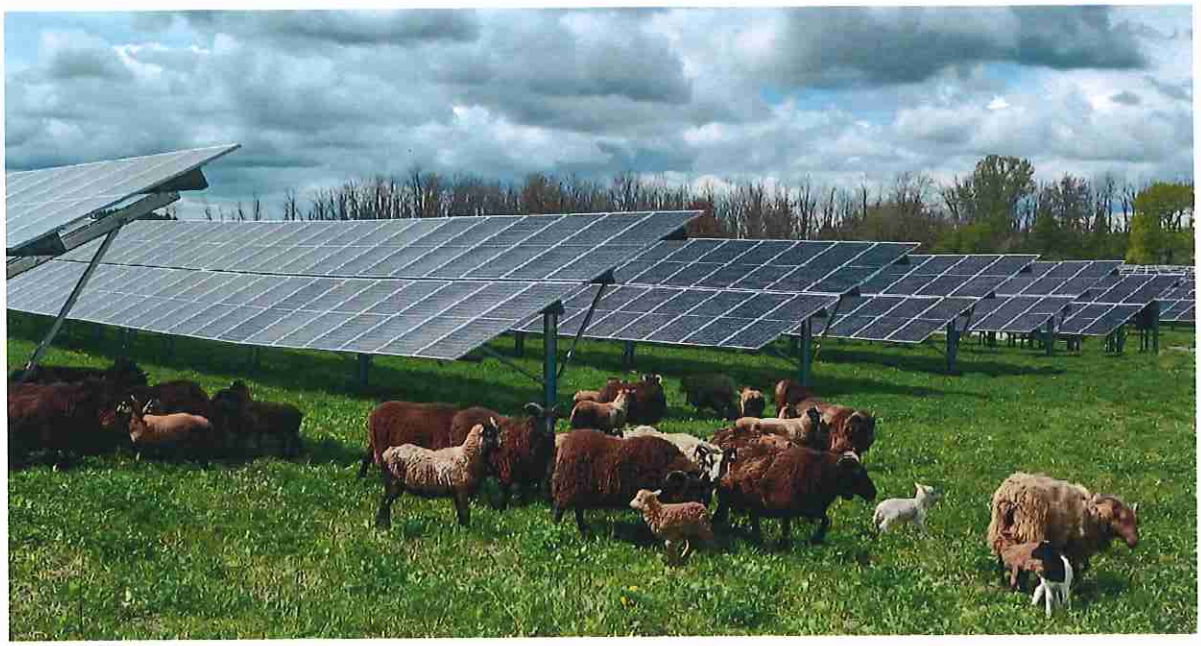
Agricultural Integration Grazing Management Plan

Renewable Properties, LLC:

Mitchell Avenue Agrivoltaic Project

RPNY Solar 12, LLC



Prepared for:

Renewable Properties, LLC

RPNY Solar 12, LLC

Michell Avenue Agrivoltaic Project

1681 US-Route 9, Stockport, NY 36021

Prepared by:

United Agrivoltaics North America, LLC.

November 2024

Contents

1.0 Introduction

United Agrivoltaics North America LLC ("United Agrivoltaics") has prepared this Agricultural Integration and Grazing Management Plan ("The Plan") for the RPNY Solar 12, LLC., Mitchell Avenue Agrivoltaic Project ("Site" or "Project"). Renewable Properties has engaged the services of United Agrivoltaics North America LLC to assist with the preparation of this plan. United Agrivoltaics is based in central New York, with 100 active grazing projects in the United States. United Agrivoltaics is owned and operated by sheep farmers with direct experience managing sheep at solar photovoltaic (PV) facilities with more than 20,000 sheep under management in 2024.

1.1 Background

The proposed up to 3.254 MWac Project will occupy approximately 16.96 acres, located on three parcels, totaling 38.82 acres in the Towns of Stuyvesant and Stockport, Columbia County, NY (PID's 62-1-47.6, 62-1-8.6, 62.4-1-5). The system design includes a single axis tracking racking system with inverters, transformer pad, access road and fencing. (**Figure 1**).

Existing land cover within the Project Parcel for the Mitchell Avenue Solar Project include agricultural hay fields, forests and wetlands. The Project Parcels are divided by the Stuyvesant and Stockport town line. Approximately 80.5% of the land in the fenced in area land is classified as farmland of statewide importance, 14.7% classified as prime farmland and 4.8% classified as not prime farmland according to USDA Gridded Soil Survey Geographic Database. 48.8% of the soils are comprised primarily of very deep and somewhat poorly drained Kingsbury and Rhinebeck soils at 0-3% slopes, 45.3% are comprised of well drained Bernardston silt loam and moderately well drained Pittstown silt loam at 0-15% slopes, 4.8% are very poorly drained Livingston and Madalin soils at 0-3% slopes, with the remaining 1.1% being Hoosic gravelly sandy loam at 3-8% slopes **(Figure 2).**

The Parcel is surrounded by adjacent properties in agricultural use, forested areas to the West and rural residential properties to the East. The Proposed Project layout features setbacks and robust landscape screening running along the northeast corner of the Project Parcel. Portions of the Parcel are underutilized with the primary agricultural use hay production. Areas out side of the Project fence will remain in hay.

According to the 2022 Columbia County Census of Agriculture 2% of land in Columbia County was in farms with approximately 64% being cropland, 15% woodland, 10.5% pastureland, and 10.5% classified as other. Land use practices were shown to be 13% intensive crop, 18% cover crop and 15% reduced till while only 19% were listed as no till. The Census indicates a -20% change in land in farms since the 2017 census and also showed a sheep and lamb inventory of 1,585 with a market value of sheep, goats wool, mohair and milk to be at $250,000. Furthermore it can be noted that a very small percentage of the farmer population (8.1%) falls into the <35 years of age category showing the decline in young farmers and reflects a decline of viability and interest in farming by younger generations.

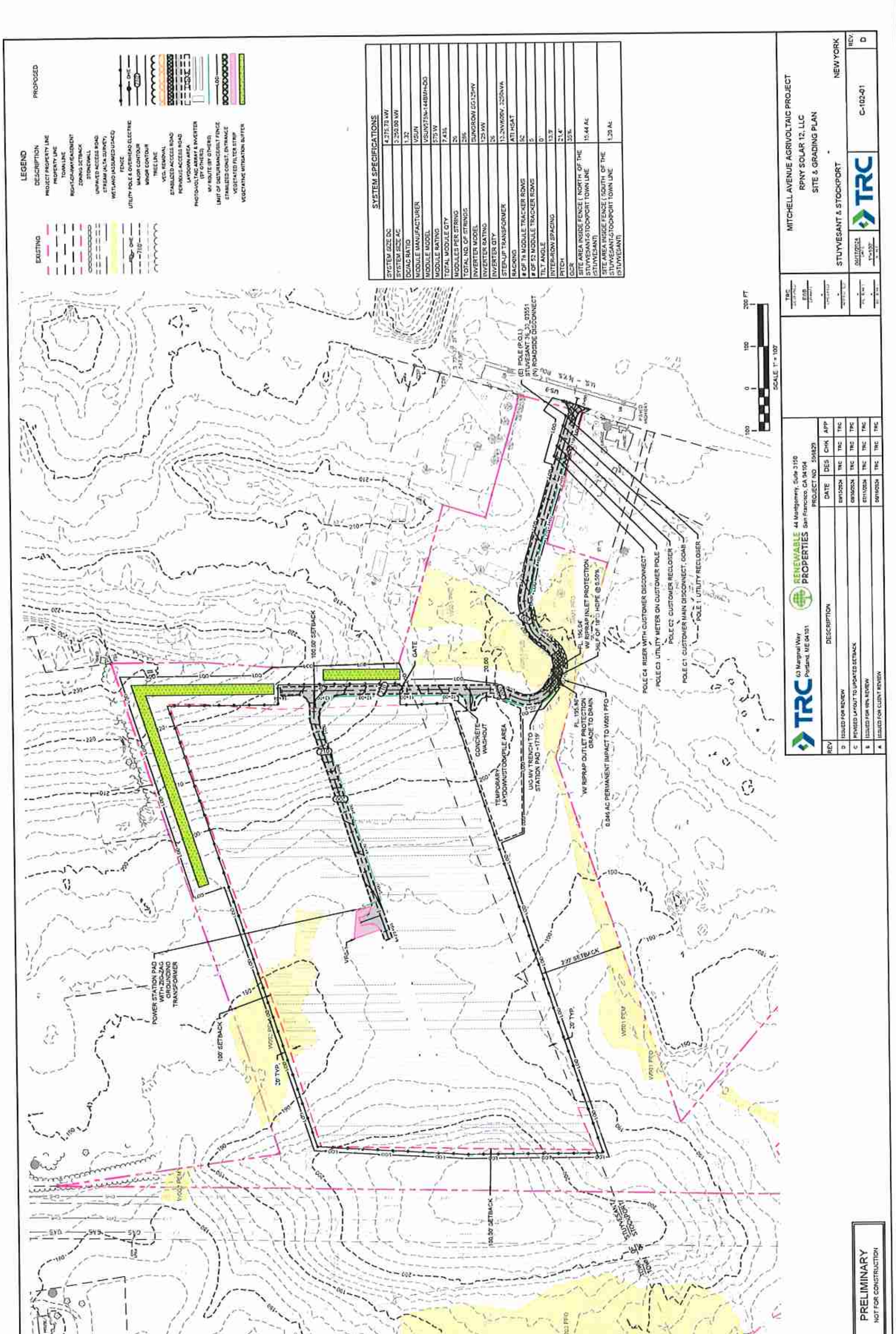
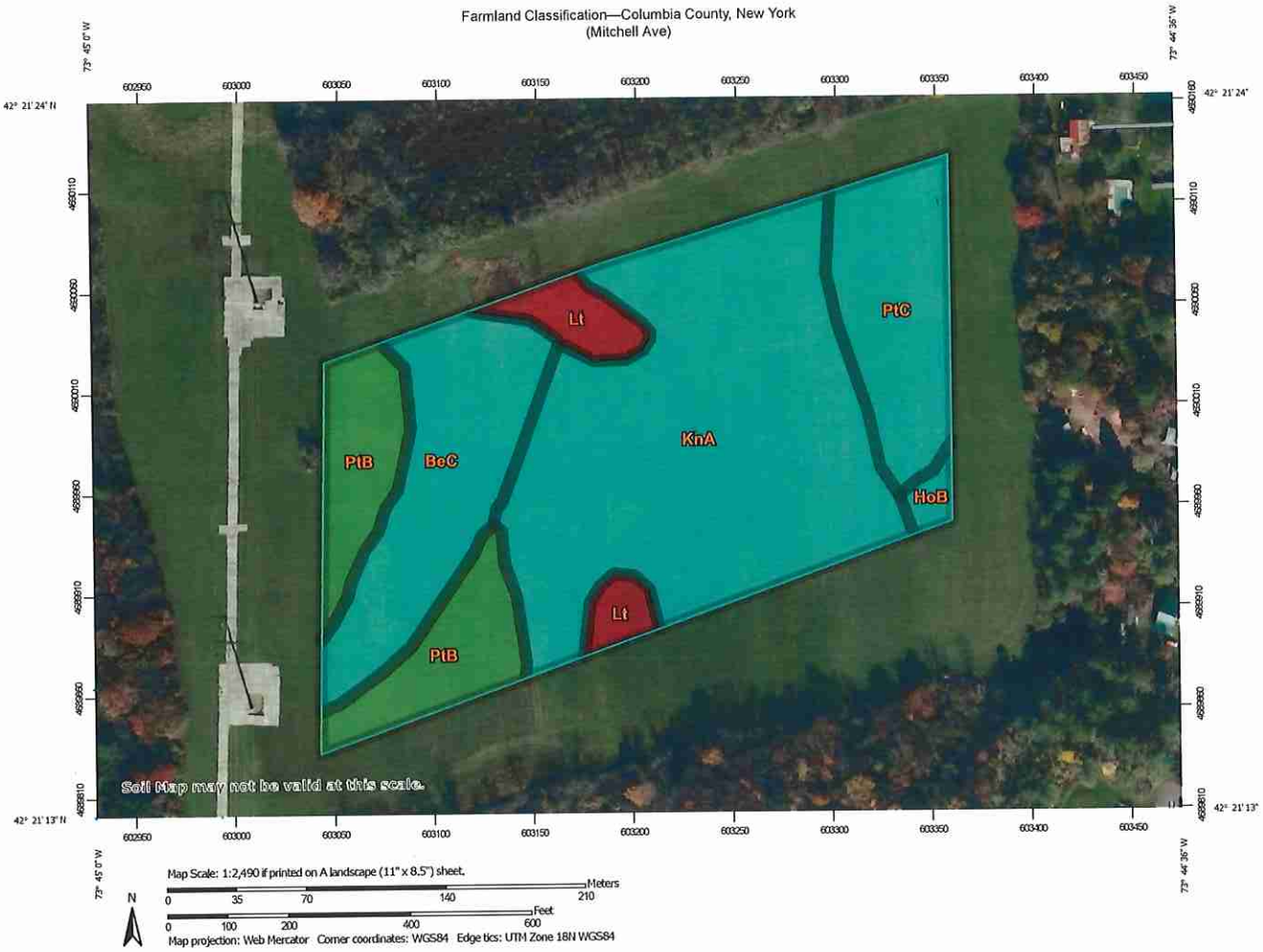

MITCHELL AVENUE AGRIVOLTAIC PROJECT
RPNY SOLAR 12, LLC
SITE & GRADING PLAN
STUYVESANT & STOCKPORT
NEW YORK
SYSTEM SPECIFICATIONS
LEGEND
PRELIMINARY
NOT FOR CONSTRUCTION

Figure 1

Figure 2



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeC	Bernardston silt loam, 8 to 15 percent slopes	Farmland of statewide importance	2.6	17.5%
HoB	Hoosic gravelly sandy loam, 3 to 8 percent slopes	Farmland of statewide importance	0.2	1.1%
KnA	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Farmland of statewide importance	7.2	48.8%
Lt	Livingston and Madalin soils	Not prime farmland	0.7	4.8%
PtB	Pittstown silt loam, 3 to 8 percent slopes	All areas are prime farmland	2.2	14.7%
PtC	Pittstown silt loam, 8 to 15 percent slopes	Farmland of statewide importance	1.9	13.1%
Totals for Area of Interest			**14.8**	**100.0%**

Description

Figure 3

2022 CENSUS OF AGRICULTURE *County Profile*

Columbia County
New York

Total and Per Farm Overview, 2022 and change since 2017

	2022	% change since 2017
Number of farms	444	-14
Land in farms (acres)	79,391	-20
Average size of farm (acres)	179	-7
Total	($)	
Market value of products sold	111,231,000	+26
Government payments	1,505,000	+65
Farm-related income	8,551,000	-7
Total farm production expenses	103,311,000	+30
Net cash farm income	17,976,000	-7
Per farm average	($)	
Market value of products sold	250,519	+47
Government payments [a]	44,261	+225
Farm-related income [a]	45,728	+1
Total farm production expenses	232,682	+52
Net cash farm income	40,486	+9

1 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	52
Livestock, poultry, and products	48

Land in Farms by Use (acres)

Cropland	50,497
Pastureland	8,382
Woodland	12,006
Other	8,506

Acres irrigated: 1,731
2% of land in farms

Land Use Practices (% of farms)

No till	19
Reduced till	15
Intensive till	13
Cover crop	18

Farms by Value of Sales

	Number	Percent of Total [b]
Less than $2,500	111	25
$2,500 to $4,999	28	6
$5,000 to $9,999	46	10
$10,000 to $24,999	77	17
$25,000 to $49,999	55	12
$50,000 to $99,999	22	5
$100,000 or more	105	24

Farms by Size

	Number	Percent of Total [b]
1 to 9 acres	91	20
10 to 49 acres	107	24
50 to 179 acres	127	29
180 to 499 acres	89	20
500 to 999 acres	20	5
1,000+ acres	10	2

USDA United States Department of Agriculture
National Agricultural Statistics Service
www.nass.usda.gov/AgCensus

2022 CENSUS OF AGRICULTURE *County Profile*

Market Value of Agricultural Products Sold

	Sales ($1,000)	Rank in State [c]	Counties Producing Item	Rank in U.S. [c]	Counties Producing Item
Total	**111,231**	**27**	**62**	**1,315**	**3,078**
Crops	**58,056**	**23**	**62**	**1,197**	**3,074**
Grains, oilseeds, dry beans, dry peas	9,924	27	55	1,550	2,917
Tobacco	-	-	-	-	267
Cotton and cottonseed	-	-	-	-	647
Vegetables, melons, potatoes, sweet potatoes	4,839	22	61	423	2,831
Fruits, tree nuts, berries	27,180	8	59	101	2,711
Nursery, greenhouse, floriculture, sod	11,836	9	60	267	2,660
Cultivated Christmas trees, short rotation woody crops	51	38	52	387	1,274
Other crops and hay	4,226	37	56	809	3,035
Livestock, poultry, and products	**53,175**	**28**	**60**	**1,053**	**3,076**
Poultry and eggs	7,434	11	59	642	3,027
Cattle and calves	(D)	(D)	56	(D)	3,047
Milk from cows	29,418	35	54	297	1,770
Hogs and pigs	493	7	55	631	2,814
Sheep, goats, wool, mohair, milk	250	19	55	767	2,967
Horses, ponies, mules, burros, donkeys	7,683	3	55	28	2,907
Aquaculture	(D)	3	30	(D)	1,190
Other animals and animal products	544	16	58	369	2,909

Producers [d]	870
Sex	
Male	529
Female	341
Age	
<35	71
35 – 64	470
65 and older	329
Race	
American Indian/Alaska Native	2
Asian	1
Black or African American	5
Native Hawaiian/Pacific Islander	-
White	857
More than one race	5
Other characteristics	
Hispanic, Latino, Spanish origin	26
With military service	44
New and beginning farmers	285

Percent of farms that:

Have internet access	**87**
Farm organically	**5**
Sell directly to consumers	**26**
Hire farm labor	**44**
Are family farms	**89**

Top Crops in Acres [e]

Forage (hay/haylage), all	21,980
Corn for grain	7,316
Corn for silage/greenchop	3,825
Soybeans for beans	3,463
Apples	2,798

Livestock Inventory (Dec 31, 2022)

Broilers and other meat-type chickens	5,420
Cattle and calves	14,966
Goats	566
Hogs and pigs	1,053
Horses and ponies	1,329
Layers	141,959
Pullets	23,552
Sheep and lambs	1,585
Turkeys	(D)

[a] Average per farm receiving. [b] May not add to 100% due to rounding. [c] Among counties whose rank can be displayed. [d] Data collected for a maximum of four producers per farm. [e] Crop commodity names may be shortened; see full names at www.nass.usda.gov/go/cropnames.pdf. [f] Position below the line does not indicate rank. (D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.

1.2 Design Intent: Co-location with Agriculture

This Project has been deliberately designed as an agrivoltaic project to meet specific local laws which require the preservation of agricultural uses and purposes on soils designated as Prime Farmland or Farmland of Statewide Importance. The implementation of this plan ensures there will be no net loss of agricultural use or access during the life of the Project, and should increase agricultural productivity and revenue (discussed further below).

Contrary to popular belief, solar development does not compete with agriculture. The practice of collocating agricultural uses alongside solar is becoming commonplace in New York. Agrivoltaics provides the landowner and local farmers with multiple revenue streams and strengthens the economic viability of local producers.

The Mitchell Avenue Agrivoltaic Project has been designed to integrate agricultural uses within the Project area, including a managed grazing system that will be implemented on all fenced-in acres utilizing sheep to control vegetation growth under and around the solar panels. Sheep grazing is a method of vegetation control used on solar facilities world-wide and is increasingly being implemented in the Northeastern United States. Recent research shows that grazing sheep under solar panels improves soil quality (Pickerel 2022). Conversion of intensive crop or reduced till agriculture into no-till pastures, as with this site, rebuilds soils naturally, reduces erosion and slowly improves soil structure and nutrient density, creating an opportunity to increase the number of beneficial no till land use practices in Columbia County.

Keeping land in agricultural use by dual-purposing it with solar and agriculture provides a solution to the loss of farmland to housing development. When combined with a well executed agricultural plan the farmland can be maintained (and even improved) under solar, by using regenerative agriculture.

The Project will create a suitable environment for sheep grazing, forage production and lamb production inside the fenced area, while allowing the current hay operation to continue as is outside of the fenced area. This is due to beneficial agreements with landowners and local farmers. RPNY Solar 12, LLC will utilize seed mixe(s) developed by United Agrivoltaics that will provide proper protein, forage and other nutritional needs for sheep while simultaneously creating areas of the Project on the interior that are suitable as pollinator habitats **(Figures 4a & 4b)**. The necessary inclusion of forbs and legumes in the forage seed mixture create pollinator-friendly vegetation, which is especially beneficial when utilizing available open areas inside the fence.

The Project's setbacks and preserved natural buffers featuring trees and shrubs will not only benefit the surrounding natural wildlife, but also contribute significantly to the environmental benefits of the Project. The woodland edges and corridors will continue to act as natural wildlife corridors meanwhile the fenced in arrays will offer a protected environment for ground nesting birds and turkeys. Compared to tilled cropland or mowed and hayed pasture, United Agrivoltaics has seen a significant increase in quail, grouse, rabbits and turkey on Projects over consecutive years due to the reduced predatory pressure and symbiotic environment that grazing offers.

Signage will be installed on site stating "Sheep Grazing" and posted on all entrances, serving as a testament to our commitment to sustainability. These efforts will maintain or increase agricultural output, create economic opportunities for local farmers, and improve the production and ecological value of the land.

2.0 Managed Grazing System

Managed grazing, also known as rotational grazing, is a livestock management technique that involves moving animals to different pastures on a regular basis. United Agrivoltaics integrates adaptive management into this practice which prevents overgrazing, gives-plants time to recover, and optimizes the many benefits of grazing. A managed grazing systems is fully compatible with solar: the solar panels do not interfere with the continued use of the land beneath the array for agricultural purposes, and they optimize a balance between electricity generation and agricultural production. The system accommodates continuous growth of crops underneath the solar panels, maintains the agricultural use of the land, maintains soil health, and will be continuously used for agrivoltaics throughout the system's lifetime, as demonstrated below. Solar facilities in the Northeast require regular vegetation control during the growing season to prevent shading and to produce electricity efficiently. A managed grazing system plan efficiently controls vegetation. Managed grazing offers many benefits over traditional means of mechanical mowing, trimming and is a more beneficial agricultural use than till intensive agricultural practices, which either damage or compact soil and offer little to no regenerative benefits. Grazing is also more beneficial for pollinator habitats when correctly implemented.

2.1 Vegetation Management

Any vegetation that grows underneath panels reaching heights above the leading edge of the panels will cause shading and must be mowed or grazed several times per year. Sheep grazing at an appropriate stocking density effectively controls this vegetation. Sheep will eat vegetation around and under panel areas that can be hard to reach, expensive, or dangerous with conventional mowing equipment, which may require additional treatments of herbicides to control vegetative growth. Meanwhile, sheep are small and agile enough to graze underneath panels and racking equipment easily. Their behavior does not predispose them to standing or jumping on equipment or chewing on electrical wiring, as goats might be inclined to do. Their size and strength mean that any rubbing on equipment is unlikely to cause damage. The perimeter fences installed in the solar project will contain the grazing sheep within the designated grazing area. The sheep farmer (i.e., "Contractor") will be responsible for any damages to personal or public property caused by sheep.

A correctly planned and implemented grazing plan with appropriate animal stocking density will offer comparable or superior vegetation control performance to a conventionally mowed site. Implementing a grazing program requires use of native forage blends that have the correct nutritional balance for sheep. Fortunately, many forage plants add to and diversify the pollinator-friendly vegetation.

2.2 Combining Livestock and Pollinator Forage

The incorporation of grazing and pollinator vegetation increases biodiversity in the parcels including; sheep, birds, rabbits, native bees, wasps, beetles, butterflies, and spiders improve the surrounding ecosystems and positively impact adjacent farmland. Forage requirements are optimized by decreasing plant species diversity under the panels and increasing diversity in the perimeter, buffer, or staging areas as appropriate, balancing the nutritional needs of the sheep with pollinator forage needs. Certain common species used for pollinators are considered toxic to sheep, including milkweed, which is essential in pollinator-friendly habitats. Species that propose toxicity concerns, such as milkweed, can be utilized in small percentages in the perimeter, buffer, and staging areas in percentages that should not threaten sheep. Palatability can be a concern for many native species, such as mountain mint, vervain, spiderwort, and sedges, so these will be used in percentages appropriate for sheep again, primarily in the staging and buffer areas.

There are other ecosystem benefits associated with agricultural integration. United Agrivoltaics farm partners have observed firsthand that sheep pick up the seeds in their wool and distribute them to other areas within the array as paddocks are grazed. Their hooves also push the seeds into the ground as they move throughout the site. We have observed that as sheep naturally lose their fleece on the site, native birds and mice will use the wool to build nests in and around the infrastructure. When following an well-managed grazing plan, pollinators can grow and spread naturally on the array.

Soil microorganisms also need diverse species of plants, which can be accomplished by using native seeds. Allowing a habitat to establish creates a living root structure and soil cover year-round (Rinehart 2017). This system of seed selection, pasture creation, and well-managed grazing works together to create a healthy soil and thriving ecosystem.

2.2.1 *Pasture and Pollinator Seed Blends*

Effective pasture blends for New York include a blend of cool-season grasses, legumes, and forbs (wildflowers). Cool-season grasses are utilized for abundant cover and livestock forage, while legumes fix nitrogen for plant uptake and create habitat for pollinators (Gelley et al., 2021).

Array Seed Blend

The selected "Array" seed blend **(Figure 4-a)** is being used to create an optimal forage for grazing that naturally incorporates pollinator-friendly native species and is also adapted to wetter conditions. This seed mix is required to give the sheep a balance of roughage and protein and includes 24 species: 11 native grasses and 13 native forb species. Most of the selected grasses are shade tolerant, and the forbs will provide a late-season pollinator forage. The selected mix will work under the array including the wet areas.

Figure 4-a

Mitchell Ave Array - RP-2024
7/16/2024

Graminoids - Scientific Name	Common Name	PLS Oz/A	Total PLS Oz	Seeds per sq. ft.	% by native seeds	Wetland Code	Hydrology: Dry	Dry-mesic	Mesic	Wet-mesic	Wet	Emergent	Shade Tolerance: Full Sun	Part	Shade	Soil Type: Clay	Loam	Sand	Muck	Bloom Time & Color: April	May	June	July	August	September	October	Legume	Height (ft)	Color
Bouteloua curtipendula	Side-oats Grama	16.00	0.000	2.20	2.82%	UPL	X	X	X	-	-	-	X	-	-	-	L	S	-	-	-	-	B	B	-	-	2-3'	g
Bromus ciliatus	Fringed Brome	8.00	0.000	1.84	2.35%	FACW	-	-	-	X	X	-	X	-	-	-	L	S	M	-	-	-	B	B	B	-	-	2-4'	g
Carex granularis	Meadow Sedge	4.00	0.000	1.47	1.88%	FACW	-	-	X	X	X	-	X	X	C	L	S	M	-	B	B	-	-	-	-	-	-	2'	g
Carex molesta	Field Oval Sedge	1.00	0.000	0.57	0.73%	FAC	X	X	X	X	-	-	X	-	-	-	L	S	M	-	-	B	B	-	-	-	-	1-3'	g
Carex vulpinoidea	Fox Sedge	3.00	0.000	6.89	8.82%	OBL	-	-	X	X	X	X	X	X	C	L	S	M	-	-	-	B	B	-	-	-	-	3'	g
Chasmanthium latifolium	See Uniola l.	8.00	0.000	0.73	0.94%	FACW	-	-	X	X	-	-	X	X	-	L	S	M	-	-	-	-	-	-	-	-	-	3'	g
Deschampsia cespitosa	Tufted Hairgrass	6.00	0.000	10.33	13.23%	FACW	X	X	X	X	-	-	X	X	0	C	L	S	0	-	-	B	-	-	-	-	-	1'-3'	g
Elymus villosus	Silky Wild Rye	8.00	0.000	1.01	1.29%	FACU	-	X	X	X	-	-	-	X	-	L	S	-	-	-	-	-	B	B	B	-	-	3'	g
Glyceria striata	Fowl Manna Grass	4.00	0.000	14.69	18.81%	OBL	-	-	X	X	X	-	X	X	C	L	S	M	-	B	B	B	-	-	-	-	-	3'	g
Poa palustris	Fowl Bluegrass	4.00	0.000	11.94	15.29%	FACW	-	-	-	X	X	-	X	X	-	-	L	S	-	-	-	B	B	B	B	-	-	2'	g
Sporobolus heterolepis	Prairie Dropseed	4.00	0.000	1.47	1.88%	FACU	X	X	X	X	-	-	X	-	-	-	L	S	-	-	-	-	-	B	B	B	-	3'	g
	Grasses Oz per Acre	**66.00**		**Grasses sds/sq ft**	**Total**																							
	Grasses Lbs per Acre	**4.13**		**53.15**	**68.05%**																							
Herbaceous Forbs - Scientific Name																												
Achillea millefolium	Yarrow	0.50	0.000	2.05	2.62%	FACU	X	X	X	-	-	-	X	-	-	C	L	S	M	B	B	B	B	B	B	-	-	2'	wht
Anemone canadensis	Canada Thimbleweed	0.50	0.000	0.09	0.12%	FACW	-	-	X	X	X	-	X	X	C	L	S	M	-	-	B	B	-	-	-	-	-	1'	wht
Aquilegia canadensis	Wild Columbine	0.25	0.000	0.22	0.28%	FACU	X	X	X	-	-	-	X	X	-	L	S	-	-	-	B	B	-	-	-	-	-	2'	red
Chamaecrista fasciculata	Partridge Pea	8.00	0.000	0.50	0.63%	FACU	X	X	X	-	-	-	X	X	-	L	S	-	-	-	-	-	B	B	B	-	L	2'	yel
Echinacea pallida	Pale Purple Coneflower	4.00	0.000	0.48	0.61%	UPL	X	X	X	-	-	-	X	X	-	C	L	S	-	-	-	B	B	-	-	-	-	3'	pnk
Eurybia macrophylla	Big-leaved Aster	0.25	0.000	0.15	0.20%	UPL	X	X	X	X	-	-	-	X	-	-	L	S	-	-	-	-	-	B	B	B	-	1'	wht
Euthamia graminifolia	Grass-leaved Goldenrod	0.25	0.000	2.01	2.57%	FAC	-	X	X	X	X	-	X	X	-	-	L	S	M	-	-	-	-	-	-	-	-	2'	yel
Lespedeza virginica	Slender Bush Clover	0.50	0.000	0.11	0.15%	UPL	-	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	B	B	B	-	L	2'	pur
Liatris scariosa (L. novae-angliae)	Savannah Blazingstar	0.50	0.000	0.12	0.16%	UPL	-	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	B	B	-	-	2'	pur
Rudbeckia hirta	Black-eyed Susan	8.00	0.000	16.90	21.64%	FACU	X	X	X	X	-	-	X	X	-	C	L	S	M	-	-	B	B	B	B	B	-	2'	yel
Solidago ohioensis	Ohio Goldenrod	0.50	0.000	1.26	1.62%	OBL	-	-	X	X	X	-	X	-	-	C	L	S	M	-	-	-	B	B	B	-	-	3'	yel
Symphyotrichum cordifolium	Heart-leaved Aster	0.25	0.000	0.80	1.03%	UPL	-	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	B	B	-	-	3'	blu
Zizia aurea	Golden Alexander	1.00	0.000	0.25	0.32%	FAC	X	X	X	X	X	-	X	X	-	C	L	S	M	B	B	B	-	-	-	-	-	3'	yel
	Forbs Oz per Acre	**24.50**		**Forbs sds/sq ft**	**Total**																							
	Forbs Lbs per Acre	**1.53**		**24.95**	**31.95%**																							
Woody Shrubs, Vines - Scientific Name																												
	Woodies Oz per Acre	**0.00**		**Woodies sds/sq ft**	**Total**																							
	Woodies Lbs per Acre	**0.00**		**0.00**	**0.00%**																							

Annuals, Temp Nurse Crop, etc.	Common Name	Bulk Oz/A	Bulk LBs	Temp Seeds per sq. ft.
Avena sativa	Seed Oats	512.00	0.000	11.75
	Temp Oz per Acre	**512.00**		**Temp sds/sq ft**
	Temp Lbs per Acre	**32.00**		**11.75**

Total PLS Lbs/Acre 'Natives'	5.66
Total Lbs/Acre 'ALL'	37.66

Total Acres	0.00
Total PLS Lbs 'Natives'	0.00
Total PLS Lbs 'ALL'	0.00

# of Native Grass Species	11
# of Native Forb Species	13
# of Native Woody Species	0
# of Temp Species	1

Mix 'Natives'	seeds/sq ft
Total per acre	78.09
% Forbs	31.95%
% Woodies	0.00%
% Grasses	68.05%

Mix 'ALL'	seeds/sq ft
Total per acre	89.85
% Forb Spp	27.77%
% Woodies	0.00%
% Grass Spp	59.15%
% Temp Spp	13.08%

Native Connections
3815 N Westnedge Ave
Kalamazoo, MI 49004
www.nativeconnections.net

NOTES: Species availability not guaranteed. Substitutions may be required. All species to be adjusted to 100% PLS (Pure Live Seed) as noted.

Buffer Seed Blend

The "Buffer" seed blend **(Figure 4-b)** has a high diversity of 39 native flowering species including 11 native grasses and 28 forb species ranging in height from 1 to 4 ft tall. This mix will create butterfly, bee, wasp, and beetle habitat throughout the grazing season. The "Buffer" seed blend focuses on having a variety of bloom colors and times throughout the season to ensure pollinators will be attracted to the site as long as possible during the growing season.

Both seed blends have been researched and developed in conjunction with local experts in sheep farming and agronomy, "United Agrivoltaics North America," and "Native Connections" based in Kalamazoo, Michigan.

An example of the selected locations for the seed blends is shown **(Figure 5)**.

Figure 4-b

Mitchell Ave Buffer
Summary 7/16/2024

Scientific name	Common Name	PLS Oz/A	Total PLS Oz	Seeds per sq. ft.	% by weight	% by native seeds	Hydrology: Dry	Dry-mesic	Mesic	Wet-mesic	Wet	Emergent	Shade Tolerance: Full Sun	Part	Shade	Soil Type: Clay	Loam	Sand	Muck	Bloom Time & Color: April	May	June	July	August	September	October	Legume	Height (ft)	Color
Bouteloua curtipendula	Side-oats Grama	32.00	32.000	4.41	379.96%	6.03%	X	X	X	-	-	-	X	-	-	-	L	S	-	-	-	-	B	B	-	-	2-3'	g
Bromus kalmii	Prairie Brome	8.00	8.000	1.47	94.99%	2.01%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	B	B	-	-	-	-	3'	g
Carex brevior	Plains Oval Sedge	2.00	2.000	1.33	23.75%	1.82%	X	X	X	-	-	-	X	-	-	-	L	S	-	-	B	B	-	-	-	-	-	1-2'	g
Carex lupulina	Hop Sedge	1.00	1.000	0.08	11.87%	0.10%	-	-	-	X	X	X	-	X	■	C	L	S	M	-	B	B	-	-	-	-	-	3'	g
Carex molesta	Field Oval Sedge	2.00	2.000	1.15	23.75%	1.57%	X	X	X	X	-	-	X	-	-	-	L	S	M	-	-	B	B	-	-	-	-	1-3'	g
Elymus villosus	Silky Wild Rye	4.00	4.000	0.51	47.50%	0.69%	-	X	X	X	-	-	-	X	■	-	L	S	-	-	-	-	B	B	B	-	-	3'	g
Glyceria canadensis	Canada Manna Grass	2.00	2.000	3.40	23.75%	4.65%	-	-	-	X	X	X	X	X	-	C	L	S	M	-	-	B	B	B	-	-	-	3'	g
Koeleria cristata (K. macrantha, pyramid.	June Grass	2.00	2.000	9.18	23.75%	12.57%	X	X	-	-	-	-	X	X	-	-	L	S	-	-	-	-	B	B	-	-	-	2'	g
Schizachyrium scoparium	Little Bluestem	16.00	16.000	5.51	189.98%	7.54%	X	X	X	-	-	-	X	-	-	-	L	S	-	-	-	-	-	B	B	B	-	3-4'	g
Sporobolus heterolepis	Prairie Dropseed	2.00	2.000	0.73	23.75%	1.01%	X	X	X	X	-	-	X	-	-	-	L	S	-	-	-	-	-	B	B	B	-	3'	g
Uniola latifolia (Chasmanthium l.)	River Oats	4.00	4.000	0.37	47.50%	0.50%	-	-	X	X	-	-	X	X	■	-	L	S	M	-	-	-	-	-	-	-	-	3'	g
	Grasses Oz per Acre	**75.00**		**Grasses sds/sq ft**	**Total**	**Total**																							
	Grasses Lbs per Acre	**4.69**		**28.13**	**890.54%**	**38.51%**																							
Achillea millefolium	Yarrow	0.50	0.500	2.05	5.94%	2.80%	X	X	X	-	-	-	X	-	-	C	L	S	M	B	B	B	B	B	B	-	-	2'	wht
Allium cernuum	Nodding Wild Onion	0.50	0.500	0.09	5.94%	0.12%	-	X	X	X	-	-	X	X	-	C	L	S	-	-	-	-	-	B	B	-	-	1.5'	pur
Amorpha canescens	Leadplant	0.50	0.500	0.20	5.94%	0.27%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	B	B	B	-	-	L	4'	pur
Aquilegia canadensis	Wild Columbine	0.50	0.500	0.44	5.94%	0.60%	X	X	X	-	-	-	X	X	■	-	L	S	-	-	B	B	-	-	-	-	-	2'	red
Asclepias tuberosa	Butterfly Milkweed	1.50	1.500	0.15	17.81%	0.20%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	B	B	B	-	-	-	2'	org
Aster azureus (A. oolentangiensis)	Sky Blue Aster	0.25	0.250	0.46	2.97%	0.63%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	-	B	B	B	3'	blu
Aster laevis	Smooth Blue Aster	0.25	0.250	0.32	2.97%	0.43%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	-	B	B	B	4'	blu
Cassia fasciculata (Chamaecrista f.)	Partridge Pea	10.00	10.000	0.62	118.74%	0.85%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	B	B	B	-	L	2'	yel
Ceanothus americanus	New Jersey Tea	0.25	0.250	0.04	2.97%	0.05%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	B	B	B	-	-	-	3'	wht
Coreopsis lanceolata	Lance-leaf Coreopsis	8.00	8.000	3.67	94.99%	5.03%	X	X	-	-	-	-	X	-	-	-	L	S	-	-	B	B	B	B	-	-	-	2'	yel
Coreopsis palmata	Prairie Coreopsis	0.50	0.500	0.11	5.94%	0.16%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	B	B	B	-	-	-	2'	yel
Dalea candida	see Petalostemum c.	8.00	8.000	3.49	94.99%	4.78%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0	wht
Dalea purpurea	see Petalostemum p.	8.00	8.000	3.31	94.99%	4.53%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0	pur
Echinacea pallida	Pale Purple Coneflower	4.00	4.000	0.48	47.50%	0.65%	X	X	X	-	-	-	X	X	-	C	L	S	-	-	-	B	B	-	-	-	-	3'	pnk
Heuchera richardsonii	Prairie Alum Root	0.25	0.250	4.02	2.97%	5.50%	X	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	B	B	B	-	-	2'	g
Lespedeza virginica	Slender Bush Clover	0.50	0.500	0.11	5.94%	0.16%	-	X	X	-	-	-	X	X	-	-	L	S	-	-	-	-	-	B	B	B	-	2'	pur
Liatris aspera	Rough Blazingstar	1.00	1.000	0.37	11.87%	0.50%	X	X	X	-	-	-	X	-	-	-	L	S	-	-	-	-	-	B	B	B	-	3'	pur
Lupinus perennis	Lupine	1.00	1.000	0.03	11.87%	0.03%	X	X	-	-	-	-	X	X	-	-	-	S	-	-	B	B	-	-	-	-	L	2'	pur
Monarda punctata	Horsemint	0.25	0.250	0.52	2.97%	0.71%	X	-	-	-	-	-	X	-	-	-	-	S	-	-	-	-	B	B	B	-	-	2'	pur
Penstemon hirsutus	Hairy Beardtongue	0.25	0.250	0.72	2.97%	0.98%	X	X	-	-	-	-	X	-	-	-	L	S	-	-	B	B	-	-	-	-	-	1.5'	pur
Pycnanthemum virginianum	Mountain mint	0.25	0.250	1.26	2.97%	1.73%	-	-	X	X	X	-	X	X	-	-	L	S	M	-	-	B	B	B	-	-	-	3'	wht
Ratibida columnifera	Long-flowered Coneflower	2.00	2.000	1.93	23.75%	2.64%	X	X	X	-	-	-	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	3'	yel
Rudbeckia fulgida	Orange Coneflower	1.00	1.000	0.71	11.87%	0.97%	-	-	X	X	-	-	X	X	-	C	L	-	M	-	-	-	B	B	B	-	-	3'	org
Rudbeckia hirta	Black-eyed Susan	8.00	8.000	16.90	94.99%	23.13%	X	X	X	X	-	-	X	X	-	C	L	S	M	-	-	B	B	B	B	B	-	2'	yel
Solidago nemoralis	Old-field Goldenrod	0.25	0.250	1.72	2.97%	2.36%	X	X	-	-	-	-	X	-	-	-	L	S	-	-	-	-	-	B	B	B	-	2'	yel
Solidago riddellii	Riddell's Goldenrod	0.25	0.250	0.53	2.97%	0.73%	-	-	-	X	X	-	X	-	-	C	L	S	M	-	-	-	-	-	B	B	-	3'	yel
Verbena stricta	Hoary Vervain	0.50	0.500	0.32	5.94%	0.44%	X	X	X	-	-	-	X	-	-	-	L	S	-	-	-	B	B	B	B	-	-	2'	blu
Zizia aurea	Golden Alexander	1.50	1.500	0.38	17.81%	0.52%	X	X	X	X	X	-	X	X	■	C	L	S	M	B	B	B	-	-	-	-	-	3'	yel
	Forbs Oz per Acre	**59.75**		**Forbs sds/sq ft**	**Total**	**Total**																							
	Forbs Lbs per Acre	**3.73**		**44.92**	**709.46%**	**61.49%**																							
	Woodies Oz per Acre	**0.00**		**Woodies sds/sq ft**	**Total**	**Total**																							
	Woodies Lbs per Acre	**0.00**		**0.00**	**0.00%**	**0.00%**																							

Annuals, Temp Nurse Crop, etc.	Common Name	PLS Oz/A	Total PLS LBs	Temp Seeds per sq. ft.
Avena sativa	Seed Oats	512.00	32.00	11.75
	Temp Oz per Acre	**512.00**		**Temp sds/sq ft**
	Temp Lbs per Acre	**32.00**		**11.75**

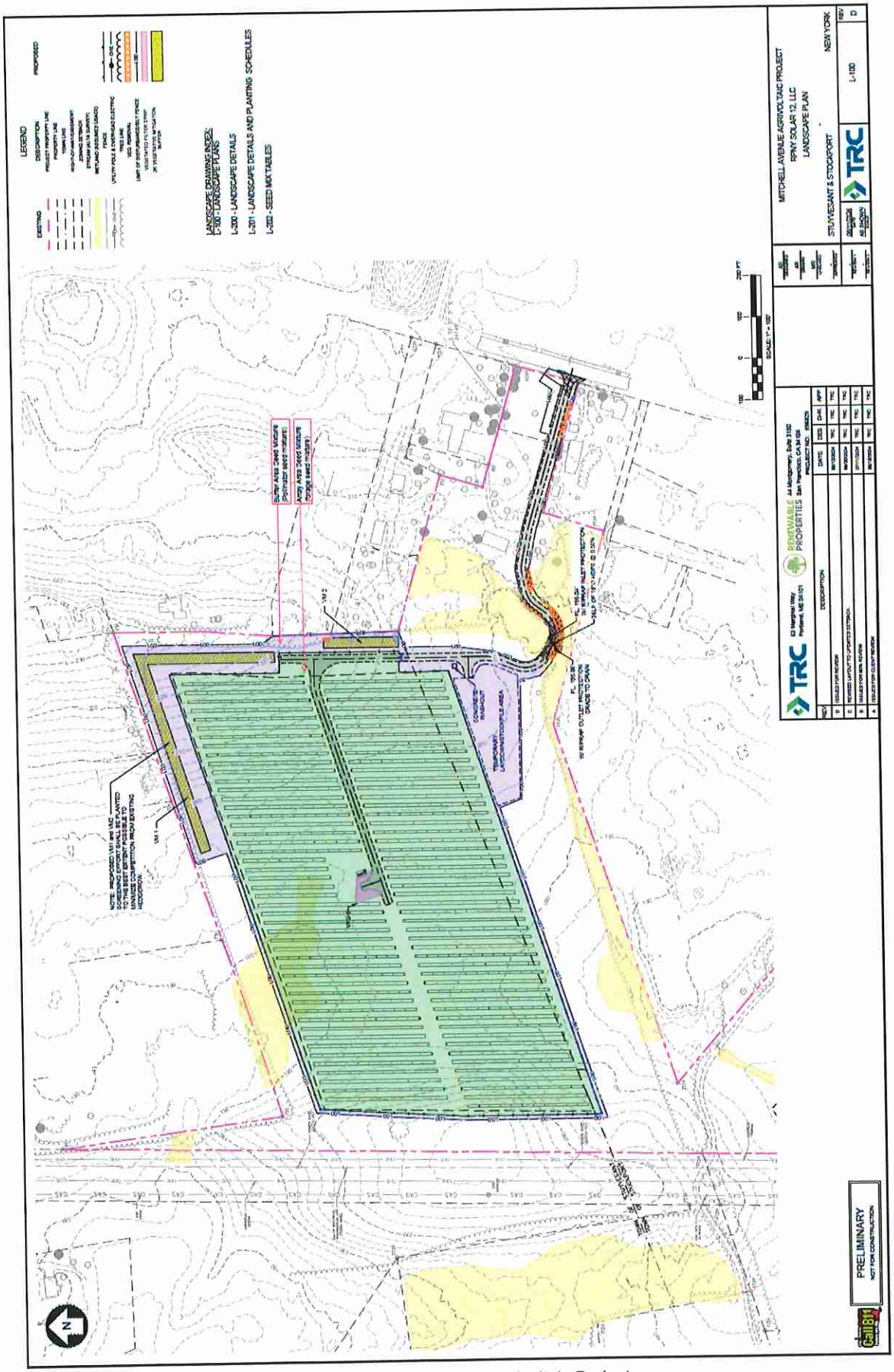

LEGEND
EXISTING
PROPOSED
LANDSCAPE DRAWING INDEX:
L-100 - LANDSCAPE PLANS
L-200 - LANDSCAPE DETAILS
L-201 - LANDSCAPE DETAILS AND PLANTING SCHEDULES
L-202 - SEED MIX TABLES
MITCHELL AVENUE AGRIVOLTAIC PROJECT
RPNY SOLAR 12, LLC
LANDSCAPE PLAN
STUYVESANT & STOCKPORT
NEW YORK
L-100
PRELIMINARY
NOT FOR CONSTRUCTION

Figure 5

2.3 Community, Ecosystem and Economic Benefits

Sheep grazing plays an important role in maintaining the agricultural production value of the Project site. The Project will also provide ancillary benefits to the local ecosystem and economy. Solar Projects that implement an agrivoltaics protect farmland from the risk of being rezoned to residential, commercial, or industrial use and therefore lost for agricultural production.

Like many rural areas, Columbia County faces challenges maintaining its agricultural industry. These challenges may include fluctuations in commodity prices, increase of input costs including cost of fertilizer, trucks or equipment, and increasing operational costs such as fuel and labor. According to the 2022 Census of agriculture Columbia county has seen a 14% decline in the number of farms, a 20% decrease of land in farms and a 7% decrease of the average farm size since 2017. In that same time-frame the market value of goods in Columbia county have increased by 26% while the total farm production expenses has increased by 30%.

By maintaining access to land and adding in a grazing contract farmer revenue per acre shows a significant increase offering a profitable business opportunity compared to hay or even corn and soy as detailed more in Section 5.

2.3.1 Generational Impact

Finding and retaining labor for farm work, especially in labor-intensive industries like dairy farming and fruit harvesting, has become an increased challenge. A declining interest in agricultural labor has contributed to this issue. Many of the county's farmers are aging, and there is a need to attract and support a new generation of farmers. Succession planning and access to resources for young and aspiring farmers are important issues. Balancing the need for agricultural production with sustainable and conservation practices has been a challenge. However, merging agricultural and clean energy production together provides a unique and multifaceted solution to these concerns.

Agrivoltaics creates multiple revue streams for the landowner and is more profitable compared to hay or even corn and soy as detailed more in Section 5. Agricultural uses on the property are less pressured from other developmental pressures, which may result in the permanent loss of agricultural land. As opposed to the Mitchell Avenue agrivoltaic project, which will be decommissioned per the New York Department of Agriculture and Markets guidelines. Meaning the property will be available as agricultural land for future generations.

2.3.2 *Soil and Ecological Health Benefits of Grazing*

Rebuilding and restoring the soil under solar facilities using grazing has been shown to benefit the ecosystem and improve it (Waltson, 2021). Grazing is a type of regenerative agriculture that creates a healthy, nutrient-dense, and runoff-resistant soil for the future. Sustainable agriculture is one in which natural resources are protected or improved for the next generation of farmers or landowners. Many issues farmers face now were caused by historic practices that did not conserve natural resources or protect them for future generations (Anderson et al 2008).

Many factors go into creating healthy pasture and healthy soil. Grazing relies on healthy soils, and healthy soils can further improve the land use potential for food or energy production. From an ecological perspective, two of the most profound systemic changes that have broad reaching impacts include:

1. The removal of cyclical soil disturbance, and
2. Increased soil stability and erosion reduction

Removal of cyclical soil disturbance: a majority of farmland is still plowed despite the fact that it causes erosion and disrupts soils health and structure. Alternatively, no-till research shows numerous benefits on soil health. Plowing fields before planting or after a harvest harms the health of the soil and reduces its ability to spur growth and resist erosion According to Ohio State University soil scientist Rafiq Islam, plowing fields before planting or after a harvest harms the health of the soil and reduces its ability to spur growth and resist erosion. Soil that is repeatedly plowed before planting or after a harvest is exposed to a large amount of oxygen that spurs microbes to feed on carbon and evaporates as CO2. (CFAES, 2017)

Increased soil stability and erosion reduction: Not only can routinely tilled fields have pesticide and herbicide runoff, but there can be significant amounts of soil erosion showing again that it is preferable to have a no-till field or pasture with a healthy varied root system of grasses and legumes. (Harrold, L.L., and Edwards, W.M.(1972)

When soil is left undisturbed, as with pasture created and maintained under a solar array using an Agrivoltaic approach, it can sustain or improve carbon sequestration while reducing erosion and runoff. (Hernandez-Santana 2013) Naturally occurring fertilization of the soil biota within the project area contributes to healthy soil ecology. Proper grazing and rest periods encourage and protect plant root development, vital to healthy erosion-resistant soil.

3.0 System Design

The system has been designed to accommodate the continuous growth of crops (sheep and forage for sheep) underneath the solar panels and maintains agricultural activity throughout the system's lifetime. The Project has also been designed with efficient grazing in mind and includes:

- 8-foot fixed knot agricultural fencing installed around the perimeter or the array.
- Panel height and spacing that can easily accommodate sheep and associated forage crops.
- Entry and exit gates designed to make it easier for the farmer to load and unload sheep at the site. 110-volt electric will be available within the Facility to provide power for portable heaters and ensure that any water source for the animals does not freeze in the early spring and late fall months.
- 4-foot fencing is proposed around the equipment pads to keep sheep off the pads and away from equipment or technicians.

4.0 Farmer Contracts

Equitable and thoughtfully negotiated contracts are the backbone of successful service agreements. Expectations for both parties must be spelled out clearly and will consider risks for both parties. Farmers rely on key benchmarks of the contract in order to plan for concurrent years of grazing or farming. Appendix A provides:

1) a sample contract for using sheep to control vegetation. The contract will also provide for mowing in the circumstance where the sheep grazing does not sufficiently reduce the vegetation to allow for effective operation of the system. The scope of work defines the planned approach the Contractor will use to control vegetation within the Project site. This Plan and the Scope provided by United Agrivoltaics allow for adaptive management methods during site maintenance, ensuring that strategic decisions are based on unique and evolving site-specific conditions. Further, it ensures that the Contractor and the owner have the autonomy and are empowered to act in the best interest of the operating efficiency of the project in consideration of the economic viability and the health, safety, and welfare of the grazing operation.
2) a letter of intent from United Agrivoltaics to fulfill this purpose. The letter of intent describes the proposed terms of the initial treatment / and roles and responsibilities of the owner (Renewable Properties) and the Contractor, in this case, United Agrivoltaics North America, LLC.

While grazing no less than one and no more than eight sheep per acre will be applied at the Project site at a time the specific number of sheep is at the Contractor's discretion and will fluctuate depending on the changing carrying capacity of the site. Sustained rotational grazing on a seasonal basis will maximize the regenerative growth and carbon sequestration opportunity. Renewable Properties will consider the ongoing opportunity for over winter holding and on site feeding perpetuate the natural fertilizing of the soil.

The Contractor may add or take sheep away from herd as the land, weather, and management objectives require with the primary objective remaining maintenance of vegetation to ensure the Solar Facility operates efficiently and vegetation is kept to an acceptable height. These animals may be contracted from one or more farms and provide a significant contribution to the local agricultural economy.

5.0 Farm Economics and Comparative Data

The economics of keeping the land in agricultural production and securing this land use for the future using solar contracts creates new opportunities for farmers and landowners. Additionally lamb production can show significant advantages to hay, corn or soy. In New York, farmer revenue per acre for grazing lamb combined with a per acre grazing contract compared to hay, corn or soy shows a significant increase in farmer revenue yield per acre; offering a profitable business opportunity for young aspiring farmers with limited or no land access.

Sheep: A typical 50-acre pasture in this region of New York should be able to sustain 60 breeding yews over winter, these yews would average 1.5 lambs to the yew as a standard metric allowing 90 lambs per year for market each fall. Estimated carrying capacity of the site is approximately 48 grazing animals or about three sheep per acre. Using the most conservative numbers and ewe lamb combos the average lamb goes to market between 65 to 70 lb. Live weight in 2024 averaged roughly $2.75 per pound (around $200 per lamb). This equates to $18,000 in total revenue opportunity associated with the grazing use for the Project site per 50 acres (Project fenced in area is 16 acres).

Crops (hay, corn or soy): An acre plot of land could produce 2.5 tons/acre of hay, 225 bushels/acre of corn or 71 bushels/acre of soybeans. While the price per ton of hay or bushels of corn and soybeans has increased the costs associated with growing these crops have also increased. Transportation costs, fertilizer, pesticides, seed cost, machine repair, fuel, oil and utilities have all increased. Farms are also seeing increased labor cost compounded with labor shortages. Despite increased market prices in 2022 of $6.60 per bushel for corn and $14.30 per bushel for soybeans the farmer return (per acre) in 2023 was $225 for hay, $365 for corn, and $179 for soybeans.

Conclusion: Based on these metrics, raising lamb in lieu of hay or rotational crops on the same area of land represents an increase vs. hay and rotational crops in farm/agricultural revenue per acre, and more than triple the current economics of the land. **(Table 1)** provides a comparative line-item assessment of these metrics and overall revenue potential associated with sheep vs. hay, corn, and soy.

Table 1

	Sheep	Hay (Balage)	Soy	Corn
Annual Yield	90 Lambs	125 tons	3,550 bushels	11,250 bushels
Annual yield per acre	1.5 Lambs	2.5 tons	71 bushels	225 bushels
Dollars per pound (stock) or dollars per bushel / ton(crops)	$2.75	$90	$14.30	$6.60
Weight at market (lbs)	71.5	N/A	N/A	N/A
Revenue Yield per AU	$200.20	N/A	N/A	N/A
Revenue Yield over 50 Acres	$18,018.00	$0	$0	$0
Revenue yield per acre	$360.36	$225.00	$179.00	$365.00
Contract revenue per acre for vegetation maintenance	$325.00	N/A	N/A	N/A
Total Revenue Per Acre	**$685.36**	**$225.00**	**$179.00**	**$365.00**

6.0 Conclusion

The Mitchell Avenue Agrivoltaic Project has been engineered to optimize a balance of electricity generation and agricultural production by incorporating a managed grazing system for vegetative management. This Project has been designed to meet specific local laws which require the preservation of agricultural uses and purposes on soils designated as Prime Farmland or Farmland of Statewide Importance. The implementation of this plan ensures there will be no net loss of agricultural use or access during the life of the Project, and should increase agricultural productivity and revenue.

Agricultural use of the land continues through the production of sheep, production of forage, and grazing of sheep for vegetative maintenance. The Project incorporates pollinator-friendly array/buffer seed mixes as supplemental agrivoltaic strategies to complement and enhance the proposed agricultural use. Agricultural use also includes the continued haying of the areas outside the fence. Furthermore, keeping land in agricultural production provides a solution to the loss of farmland to other developmental pressures, such as for housing and industrial developments.

United Agrivoltaics can demonstrate a net increase per acre in farm revenue by maintaining access to the land and adding a grazing contract. The efforts made by RPNY Solar 12, LLC. contribute to, and uphold the longstanding community character of Stockport and Stuyvesant and the Project will have a significant positive impact in Columbia County and within the local communites.

7.0 References

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8.0 Appendices

BIO: Caleb Scott

CEO - United Agrivoltaics North America

Founding Member - American Solar Grazing Association

Board Chair - Heartland Alliance

As Board Chair of the UA Heartland Alliance and owner of United Agrivoltaics, Caleb is helping pave the way for the development of industry standards and best practices. The UA Heartland Alliance NGO is explicitly dedicated to creating resources for farmers and facilitating the successful implementation of agrivoltaics in Illinois and other heartland states. Being one of the nation's first solar grazing contractors, Caleb has seen the industry grow from infancy. Caleb and his team work with a large network of farm partners and solar developers throughout Illinois and the greater US to graze sheep on PV arrays. Helping communities and asset owners across the United States, Caleb and his team understand the benefits of using an agrivoltaic approach.

Appendix A

Note: This is an example contract to provide the Planning Board with an understanding of the terms and conditions associated with this type of arrangement.

AMERICAN SOLAR GRAZING ASSOCIATION, INC. SHEEP GRAZING AGREEMENT TEMPLATE

OPTION 1
(Comprehensive Vegetation Management Approach)

This template was developed by Savannah Bowling and Kasey Brenner, student attorneys at the Food and Beverage Law Clinic, in collaboration with the American Solar Grazing Association, Inc. and Jonathan Barter, Julie Bishop, Ashley Bridge, Lewis Fox, Erica Frenay, Lexie Hain, Niko Kochendoerfer, and Caleb Scott. The Food and Beverage Law Clinic is a part of John Jay Legal Services, Inc., a non-profit legal services organization housed at the Elisabeth Haub School of Law at Pace University. The Food and Beverage Law Clinic represents farmers, food and beverage entrepreneurs, and non-profit organizations seeking to improve our food system. This document does not reflect or constitute legal advice. Your use of this document does not create an attorney-client relationship with the Clinic or any of its lawyers or students.

INSTRUCTIONS FOR USING CONTRACT TEMPLATE: This contract represents Sheep Grazing Agreement – Option 1, which is a comprehensive vegetation maintenance approach, whereby the sheep farmer agrees to maintenance of all vegetation, regardless of whether it is vegetation that sheep typically eat or do not eat. This obligation means that in the event that the sheep do not achieve the vegetation standard set forth in Section 1(b) of the contract, the sheep farmer is responsible for achieving that standard through some other means (for example, through the use of a landscaping service).

Option 1 v. Option 2: In contrast, Sheep Grazing Agreement – Option 2 represents a limited vegetation management approach, whereby the sheep farmer agrees to maintenance of only the vegetation that sheep typically eat, defined as "Covered Vegetation" in the contract. Types of vegetation that constitute "Covered Vegetation" are determined by the contracting parties. Similar to Option 1, the obligation under Option 2 means that in the event that the sheep do not achieve the vegetation standard for Covered Vegetation set forth in Section 1(b) of the contract, the sheep farmer is responsible for achieving that standard through some other means (for example, through the use of a landscaping service). The solar site manager is responsible for maintenance of all vegetation that is not Covered Vegetation.

This contract is a template; it is not a one-size-fits all contract. All provisions that are *[red, bolded, italicized, and bracketed]* and all provisions with blank spaces (_____) and/or guidance footnotes should be addressed by the parties, in addition to any other changes the parties may negotiate. Carefully review all attached exhibits (Exhibits A – E). Note that the certificate of liability insurance, attached as Exhibit D, is a sample only; parties to this contract must obtain their own insurance and replace this sample with their respective insurance certificates.

Once the contract is complete, **DELETE** all footnotes throughout the contract. instructional page is not part of contract.

SHEEP GRAZING AGREEMENT

This sheep grazing agreement (this "Agreement"), is made and entered into this ____ day of _____ 20___, by and between *[sheep farmer name]* ("Sheep Farmer") and *[solar site manager name]* ("Solar Site Manager" and, together with Sheep Farmer, each a "Party" and collectively the "Parties").

RECITALS

WHEREAS, Solar Site Manager is the *[owner/operator]*[1] of *[name of solar site]*, located at *[address of solar site]* ("Solar Site"), as more fully described attached hereto as Exhibit A.

WHEREAS, Sheep Farmer owns sheep that will be grazed on the Solar Site; and

WHEREAS, the Parties desire and intend to enter into this Agreement to facilitate the grazing of Sheep Farmer's sheep on the Solar Site for the purpose of vegetation management.

NOW THEREFORE, in consideration of the foregoing recitals that are incorporated herein by reference and covenants made herein and other good and valuable consideration, the Parties, intending to be legally bound, agree as follows:

TERMS OF THE AGREEMENT

Section 1. Vegetation Management Services.

(a) Sheep Farmer shall provide sheep at the Solar Site in accordance with Section 2 for the purpose of grazing to maintain all vegetation at the Solar Site.

(b) Sheep Farmer shall cause all vegetation on the Solar Site to be maintained so that such vegetation *[does not shade the solar panels]* **OR** *[does not reach a height taller than _____ inches]*[2].

(c) In the event that the sheep do not effectively maintain all vegetation in accordance with the agreed-upon standard set forth above, Sheep Farmer shall be responsible for achieving that agreed-upon standard. Sheep Farmer may fulfill the vegetation maintenance standard through subcontracting (in accordance with Section 8) a landscaping service or other service or by some other means.

(d) Sheep shall be stocked at a density as determined by Sheep Farmer to satisfy the agreed upon vegetation maintenance standard set forth above. Sheep Farmer may add or remove sheep from flock as the land, weather, management, and other conditions may require, to the extent that the sheep flock remains capable of maintaining the vegetation in accordance with this Agreement. Sheep Farmer may perform forage sampling at the Solar Site (in accordance with Exhibit E) in order to determine the appropriate density of sheep. Sheep Farmer is not bound by the suggestions represented by the forage sampling.

[1]Insert the operational status of the Solar Site Manager.

[2] Choose one of the two vegetation height standards that is applicable and delete the other one.

Section 2. Grazing Season.

(a) *[For each year during the Agreement Term (as defined below),]*[3] the grazing season during which the services described in Section 1 shall be performed (the "Grazing Season") shall commence on *[grazing season begin date]*[4] (the "Season Commencement Date") and shall end on *[grazing season end date]*[5] (the "Season End Date").

(b) *[For each year during the Agreement Term,]*[6] Sheep Farmer shall deliver sheep to the Solar Site on the Season Commencement Date and shall promptly remove all sheep from the Solar Site no later than the Season End Date.

(c) The Parties may agree in writing to modify the Grazing Season *[for any year during the Agreement Term]*[7]. In the event that the Grazing Season is shortened or extended, the Parties may agree in writing to modifications to the fee and payment schedule.

d) The parties commit to annual reporting of the productivity or the herd, including pounds harvested/grazed, her size growth

Section 3. Agreement Term; Termination; Other Remedies.

(a) The term of this Agreement (the "Agreement Term") shall be for *[____ year(s)]*[8] and shall commence on *[begin date]*[9] and shall end on *[end date]*[10] (the "Termination Date").

(b) Termination by Solar Site Manager.

(i) By written notice effective upon receipt, Solar Site Manager shall have the right to terminate this Agreement prior to the Termination Date for Sheep Farmer's material breach of any of its obligations under this Agreement; provided, however, that if such default is capable of cure, then such notice shall be subject to a *[____ day cure period]*[11] from the date thereof, and if the defaulting Party cures such default prior to expiration of such period, termination shall not take place. Sheep Farmer shall immediately discontinue the services to the extent specified in any notice.

[3] Include if this is a multi-year contract.

[4] Insert a specific date or language that reflects the beginning of the grazing season.

[5] Insert a specific date or language that reflects the end of the grazing season, such as "when the vegetation height standard set forth in Section 1 is satisfied and the cyclical senescence of the vegetation is beginning with the arrival of fall frosts."

[6] Include if this is a multi-year contract.

[7] Include if this is a multi-year contract.

[8] Indicate whether this is a: 1-year agreement or multi-year (2-year, 3-year, 4-year, etc.) agreement.

[9] Insert applicable date that the Agreement Term will begin.

[10] Insert applicable date that the Agreement Term will end.

[11] Insert a cure period date. This cure period is the amount of time the Sheep Farmer has to remedy a material breach of this Agreement without penalty. For example, a 5-day cure period would give the Sheep Farmer 5 days to cure the material breach from the date the Sheep Farmer received notice from the Solar Site Manager of the material breach (if the material breach is capable of cure).

(ii) No termination by Solar Site Manager shall relieve Solar Site Manager of its obligation to pay Sheep Farmer for services properly performed prior to such termination, and upon termination. Such payment shall be adjusted on a ratable basis accordingly. Solar Site Manager shall reimburse Sheep Farmer for reasonable termination expenses, which shall not include consequential damages, unperformed work, or anticipatory profit. In no event shall termination costs plus all compensation paid hereunder exceed the total price agreed for the services under this Agreement.

(iii) ***[By written notice effective upon receipt, Solar Site Manager shall have the right to terminate this Agreement without cause prior to the Termination Date, provided that Solar Site Manager shall pay Sheep Farmer the entire Contract Price in accordance with Section 4 upon such termination without cause.]***[12]

(c) Termination by Sheep Farmer.

(i) By written notice effective upon receipt, Sheep Farmer shall have the right to terminate this Agreement prior to the Termination Date (A) for Solar Site Manager's failure to make a required payment in accordance with Section 4, (B) for Solar Site Manager's material breach of any of its obligations under this Agreement, or (C) if severe weather conditions or unforeseen Solar Site conditions no longer permit safe and effective solar grazing for the remainder of the Agreement Term; provided, however, that if such default is capable of cure, then such notice shall be subject to a ***[day cure period]***[15] from the date thereof, and if the defaulting Party cures such default prior to expiration of such period, termination shall not take place.

(ii) No termination by Sheep Farmer shall relieve Solar Site Manager of its obligation to pay Sheep Farmer for services properly performed prior to such termination, and upon termination. Such payment shall be adjusted on a ratable basis accordingly.

(d) Sheep Farmer's Right to Perform Solar Site Manager's Obligations.

[12] Include this provision if applicable.

[13] Include if this is a multi-year contract.

[14] Include if this is a multi-year contract.

[15] Insert a cure period date. This cure period is the amount of time the Solar Site Manager has to remedy a specific breach provided for in Section 3(c)(ii) of this Agreement without penalty. For example, a 5-day cure period would give the Solar Site Manager 5 days to cure the breach from the date the Solar Site Manager received noticed from the Sheep Farmer of the breach (if the breach is capable of cure).

(i) If Solar Site Manager fails to perform its obligations set forth under Section 6, and such failure continues twenty-four (24) hours after notice from Sheep Farmer (except in the case of an emergency when no notice shall be necessary), Sheep Farmer may, but shall not be obligated to, perform Solar Site Manager's obligations or perform work resulting from Solar Site Manager's acts, actions, or omissions and Solar Site Manager shall reimburse to Sheep Farmer, upon demand, the total cost of such performance.

Section 4. Contract Price.

(a) Solar Site Manager shall pay Sheep Farmer for services provided herein according to the following payment terms and schedule: ***[$ fee and payment schedule for year 1], [$ fee and payment schedule for year 2], [$ fee and payment schedule for year 3]***[16].

Section 5. Sheep Management, Health, and Welfare.

(a) Sheep Farmer shall be responsible for all transportation of sheep to and from the Solar Site.

(b) Sheep Farmer shall be responsible for the health and wellbeing of sheep, including keeping adequate water and mineral supply during the Agreement Term. Sheep Farmer shall be permitted to station watering cubes and other portable watering and dispensing equipment at the Solar Site during the Agreement Term. Sheep Farmer shall maintain adequate medical records and herd information and shall provide Solar Site Manager with such records upon request.

(c) Sheep Farmer shall have twenty-four (24) hour access to sheep during the Agreement Term. Sheep Farmer shall keep Solar Site access details confidential.

(d) Solar Site Manager shall provide prompt verbal notice to Sheep Farmer if Solar Site Manager becomes aware that any of the sheep are apparently suffering from illness or accident, followed by written notice. In the event that any of the sheep urgently need care, and the Sheep Farmer is not immediately available, Solar Site Manager shall call in a licensed veterinarian at Sheep Farmer's expense.

[16] Insert fees and payment schedules for each grazing season (in each respective year, if applicable). Fees may remain the same each year, may increase by a fixed percentage each year, or may be determined by some other method by the parties.

[17] Include if this is a multi-year contract.

(e) Solar Site Manager shall provide Sheep Farmer with twenty-four (24) hour notice of need for repairs or of need to access panels within a sheep grazing area so that Sheep Farmer may assist with managing sheep during such repairs or access.

(f) *[Sheep Farmer shall be permitted to keep guardian dog(s) at the Solar Site.]*[18]

Section 6 Fencing, Signage, Security, and Solar Panel Maintenance.

(a) Solar Site Manager shall provide permanent, secure perimeter fencing and gating to ensure that sheep may not escape the Solar Site and that predators may not enter the Solar Site. Secure perimeter fencing means that such fencing shall have: rigid tension, fencing that is flush to the ground, fenced culverts, and gates that close tightly. Other than opening the gate for entering and exiting the Solar Site, such fencing and gating shall be closed at all times. In the event that Solar Site Manager must modify existing fencing, gating, and signage to meet the above-described standards, Solar Site Manager shall be responsible for all costs associated with obtaining and installing such fencing, gating, and signage.

(b) Solar Site Manager shall permit Sheep Farmer to install interior fencing at the Solar Site that is reasonably necessary to ensure orderly management and security of sheep. Solar Site Manager shall permit Sheep Farmer use of interior electrical and power supplies at the Solar Site or, alternatively, use of auxiliary electrical and power supplies at the Solar Site. Sheep Farmer shall not be responsible for any costs incurred from use of such interior or auxiliary power and electrical supplies at the Solar Site.

(c) Solar Site Manager shall post signage at entrance gate and at *[additional locations]*[19] to alert visitors that sheep are present on the Solar Site, to direct visitors to close the gates at all times, and to instruct visitors not to feed the sheep at any time. The following notice shall serve as an adequate signage message:

CAUTION: SHEEP ON SITE DO NOT APPROACH ANIMALS IMMEDIATELY CLOSE GATE

(d) Solar Site Manager shall maintain adequate records of all persons entering and exiting the Solar Site, including regular maintenance and operations personnel, and such record shall include names, dates, and duration of stay. These records shall be available to Sheep Farmer upon request.

(e) Solar Site Manager shall provide Sheep Farmer with twenty-four (24) hour electronic notice of all planned visitors. Solar Site Manager shall require all persons defined as a "Visitor" on the Visitor's Orientation, attached hereto as Exhibit B, to read and sign the Visitor's Orientation. Solar Site Manager shall maintain adequate records of the signed Visitor's Orientation documents.

[18] Insert this provision if applicable.

[19] Insert additional locations if applicable.

(f) Sheep Farmer shall be permitted to inspect fencing and gates periodically throughout the Agreement Term (including without limitation prior to the Season Commencement Date *[for the first year of the Agreement Term]*[20]).

(g) Solar Site Manager shall supply visitors, including without limitation, all employees, contractors and subcontractors, students, and researchers with the "Meet the Grazing Sheep" informational sheet, attached hereto as Exhibit C, prior to or upon arrival at the Solar Site.

(h) Solar Site Manager shall be responsible for costs associated with maintaining, repairing, or cleaning solar panels and Solar Site equipment, including when the need for such maintenance, repairs, or cleaning is caused by the natural activity of the sheep.

(i) Solar Site Manager shall require the following additional safety measures: *[specific list of additional safety measures]*[21].

(j) [Sheep Farmer shall be permitted to install surveillance technology, gate alarm, or other system to keep track of who enters and exits the site.][22]

Section 7. Use of Herbicides, Pesticides, and Fungicides. Neither Party nor their subcontractors shall use herbicides, pesticides, or fungicides on the Solar Site without prior written consent of the other Party.

Section 8. Subcontractors. Solar Site Manager authorizes Sheep Farmer to subcontract the performance of its vegetation maintenance services obligations described under this Agreement. Sheep Farmer authorizes Solar Site Manager to subcontract the performance of its fencing, signage, and security obligations or other maintenance services described under this Agreement. No subcontracting shall relieve either Party from its duties, responsibilities, obligations, or liabilities under this Agreement. Each Party shall be solely responsible for the acts, omissions, or defaults of its subcontractors. Each subcontractor shall in any event comply with relation thereto. Each Party shall be solely responsible for the payments to be made to any subcontractors by the terms and conditions provided in any subcontracts it has entered into. Any subcontractor must be included in the subcontracting Party's insurance coverage under this Agreement.

Section 9. Notice. Any notice required or permitted under this Agreement shall be sent to the following Party representatives:

If to Sheep Farmer:

Name: _____
Address: _____
_____
Phone Number: _____
Email Address: _____

[20] Include if this is a multi-year contract.
[21] Insert additional safety measures if applicable.
[22] Insert this provision if applicable.

If to Solar Site Manager:

Name: _____
Address: _____
_____
Phone Number: _____
Email Address: _____

Section 10. Indemnification. Sheep Farmer agrees to indemnify and hold harmless Solar Site Manager from all claims arising from any injury (or death) to Sheep Farmer's sheep, any injury (or death) to persons on the Solar Site directly caused by Sheep Farmer's sheep, or any damage to Sheep Farmer's sheep infrastructure on the Solar Site, unless such injury, death, or damage is the result of the negligence or willful misconduct of Solar Site Manager or Solar Site Manager's employees, subcontractors, and agents.

Solar Site Manager agrees to indemnify and hold harmless Sheep Farmer from all claims arising from any injury (or death) to persons on the Solar Site (other than those directly caused by Sheep Farmer's sheep) or any damage to personal property on the Solar Site (other than Sheep Farmer's sheep infrastructure), including damage to perimeter fencing or solar panel wiring and racking systems and any other electrical infrastructure or other personal property on the Solar Site caused by the natural activity of the sheep, unless such damage is the result of the negligence or willful misconduct of Sheep Farmer or Sheep Farmer's employees, subcontractors, and agents. Solar Site Manager agrees to indemnify and hold harmless Sheep Farmer from all costs associated with maintaining, repairing, or cleaning solar panels and Solar Site equipment in accordance with Section 6(h).

Section 11. Insurance. Parties will comply with the insurance terms specified in the insurance agreement, attached hereto as Exhibit D.

Section 12. Assignment. Either Party's duties, obligations, and responsibilities under this Agreement may not be delegated nor its interests assigned to any third party without the prior written consent of the other Party.

Section 13. Severability. The Parties acknowledge and agree that should any provision of this Agreement or the application of such provision to the Parties, any other person(s) or circumstance(s) be ruled contrary to law in any way, by any Court or any authorized agency, the remainder of this Agreement or other provisions shall not be affected by such ruling.

Section 14. Governing Law. This Agreement shall be construed and governed by the laws of the State of ***[state in which work is rendered]***[23].

[23] Insert the state in which the services under this Agreement will be rendered.

Section 15. Compliance with Applicable Laws. Both Parties and their employees, representatives, and agents, shall comply at all times with all present or future applicable laws, rules, ordinances and regulations, and all amendments or supplements thereto, governing or relating to the services performed pursuant to this Agreement, as may from time to time be promulgated by federal, state or local governments and their authorized agencies.

Section 16. Waiver. The failure of either party to insist in any one or more instances upon strict performance of any of the provisions of this Agreement or to take advantage of any of its rights will not be construed as a waiver of any such provision or the relinquishment of such right.

Section 17. Entire Agreement. This Agreement constitutes the entire agreement between Sheep Farmer and Solar Site Manager and supersedes any prior oral or written agreement with respect to the subject matter of this Agreement.

Section 18. Amendments. This Agreement may be modified or amended only by written agreement fully executed by the Parties.

Section 19. Sale of Lamb Meat. Any agreement between the Parties to buy or sell lamb meat shall be made separate from this Agreement.

SIGNATURE PAGE TO FOLLOW8

IN WITNESS THEREOF, the parties hereto have executed or approved this Agreement on the dates below their signatures.

Sheep Farmer: _____

Signature: _____

Name & Title: _____

Date: _____

Address: _____

_____

Solar Site Manager: _____

Signature: _____

Name & Title: _____

Date: _____

Address: _____

EXHIBIT A
SOLAR SITE DESCRIPTION

Solar Site Name: _____

Solar Site Address: _____

_____

Estimated Acreage: _____

Description of Solar Site (narrative description and/or attach photograph or map that clearly depicts Solar Site boundaries):

EXHIBIT B
VISITORS' ORIENTATION AND RULES

Name of Solar Site(s) and Address(es):

Visitors:

- "Visitor" includes: (1) Any person who is visiting the Solar Site for a short duration and who will not perform work at the site, and (2) Any contract employee who does not normally perform extended work at the site such as a delivery driver.
- No vehicle(s) (cars, pickup trucks, trucks, trailers) are allowed in the Solar Site, unless for loading and unloading during the performance of the agreed-upon service, and only upon Solar Site Manager or Solar Site Manager's point of contact's consent. In the event of vehicle access (for example, for loading and unloading purposes), the vehicle must park in the open area just next to the gate entrance. Under no circumstances are vehicles allowed around the solar arrays.
- All visits must be communicated to Solar Site Manager or Solar Site Manager's point of contact.
- ALL VISITORS ACCESS THE SOLAR SITE MUST SIGN THE FORM ON THE FOLLOWING PAGE.

You May Be Asked to Leave the Site: (1) For not abiding by safety rules, (2) in the case of an emergency, or (3) for any other reasons or demands upon the escort.

PPE Required: (1) Steel-toe boots, (2) gloves, (3) safety glasses, (4) reflective vest or other reflective clothing, (5) working pants, and (6) _____ _____ _____ _____.

Incident Reporting: All accidents, injuries, near misses, and other incidents must be reported immediately to Solar Site Manager or Solar Site Manager's point of contact.

Material Handling: (1) Must use proper lifting technique at all time, and (2) must get help for materials weighing over 50 pounds, materials that are longer than 10 feet in length, and for materials that are awkward in shape.

Training: It is your employer's responsibility to provide the training you may need to perform your job. If you are asked to perform a task that you are not trained for, STOP and DO NOT perform task. Contact your employer. NEVER perform any task without the proper training.

Zero Incident Performance: (1) NO cell phone use while operating equipment or vehicles, (2) NO horseplay, (3) NO stealing, (4) NO illegal drug use, (5) NO alcohol use, (6) NO use or presence of fire arms, and (7) NO smoking.

EXHIBIT B
VISITORS' ORIENTATION AND RULES
(continued)

EACH PERSON ACCESSING THE SOLAR SITE MUST SIGN THIS FORM!

Basic Site Safety Rules: These Basic Site Safety Rules are in addition to any rules, regulations, or requirements required by any public agency within the appropriate jurisdiction.

Please read the following:

I understand that it is my responsibility to learn and follow all the applicable safety rules and regulations that pertain to my scope of work and visit to this site.

I also understand that it is my ultimate responsibility to ensure that my work area is safe prior to entering and performing work. I have had the opportunity to ask questions, and I understand that violation of the Solar Site safety rules contained herein Exhibit B, as well as any additional rules that I have been made aware of, may result in disciplinary action, including removal from the
Solar Site. Have had the opportunity to ask questions about any Solar Site-specific hazards and conditions, and I am aware of where I may obtain further information regarding the safety rules (i.e. Operator's Safety Manual). In consideration for granting permission to the undersigned to
enter such premises, the undersigned does hereby RELEASE AND FOREVER DISCHARGE Operator, their agents and servants, and all other persons, firms and corporations connected therewith of and from any and all liability, actions, claims, demands, or suits whatsoever for personal injuries or death suffered or resulting from any acts or omissions of said company whether from known or unknown, apparent or unapparent hazards on the jobsite.

I have read and understood the information contained in this orientation and agree to be bound by the rules of the Solar Site.

Print Name: _____
Company: _____

Signature: _____
Date: _____

Purpose of Visit:

_____
_____
_____

EXHIBIT C
MEET THE GRAZING SHEEP

MEET THE GRAZING SHEEP

Hello! Welcome to the Solar Site. This Solar Site has grazing sheep. These sheep are owned or managed by a local farmer and will be kept at this site as a way to manage the site vegetation.

Sheep are friendly but can be scared easily by loud noises, stray dogs, people chasing them, and other threats. Please treat the sheep with respect.

Sometimes the sheep will have a portable electric fence around them called an *electronet*. The electricity in this fence is low voltage and designed to give the sheep a gentle reminder about where to stay.

The electronet is controlled at the *solar power charger* or at an *auxiliary power unit*. The electronet may be turned off, but simply stepping over the fence is preferred. **If you turn the electronet off during your visit, please TURN IT BACK ON before you leave.**

When you visit the solar site, here are a few guidelines to follow:

1. You may contact _____ at _____ for emergencies.

2. Please CLOSE THE GATES! The sheep can escape if you do not close the gates. 3. Please do not feed or approach the sheep.

4. Remain calm and avoid eye contact with sheep.

5. All photos and media coverage are prohibited without permission from appropriate authorities.

6. Please leave all fencing, chargers, and other sheep supplies where you found them.

Thank you! And please close the gates behind you!

UNITED AGRIVOLTAICS

Commercial land Grazing

Scope of Work

Scope of work proposal for [name of solar company] All Work required herein shall be performed in accordance with these specifications and to the sole satisfaction of [name of solar company], and affiliated parties The appropriate licenses, permits, insurances and certifications are the sole responsibility of [Farm Partner Name] hereafter referred to as "the contractor".

All work will be performed by qualified employees in a manner that will meet or exceed accepted Industry practices.

All labor & material are the responsibility of the contractor unless otherwise specified. Any deviation from this specification resulting in extra charges is to be approved in advance by [name of solar company]. Contractor may be asked to perform out of scope work like mowing the exterior perimeter of the fence fixing fence, or remove any weeds witch the sheep don't eat that are touching the panels. Any invoice for additional work must be approved by the Property Manager, invoiced separately, and reference the Work Order number unless otherwise specified in righting.

Contractor agrees to farm the site known as [name of solar site] Project, in a manor constant with the wishes of the existing land owner and use organic farming practices
Contractor agrees to provide a number of sheep, to be determined each year based on weather and grass growth, capable of maintaining vegetation that sheep eat at an acceptable level. During the growing season no less than 1 and no more than 8 sheep per acre depending on the changing capacity of the sight. Sustained rotational grazing seasonally will maximize the regenerative growth and carbon sequestration. Permission is granted for over winter holding and on site feeding to further the natural fertilizing of the soil.
Contractor will furnish and maintain a Honey bee hive on site to increase native pollinators and diversify farm revenue.

This location has been proposed for research and development of new Agrivoltaic land uses to maximize the farming potential

[name of solar company], Inc agrees to pay a set cost for the year based on each fenced in acre plus applicable taxes for this service.

Contractor is responsible for checking the fence line to make sure sheep are adequately secure and safe from predators, if a repair is to be made then the contractor will submit a quote and photos for Pryor approval for repairs.

Contractor must provide rates per hour for labor and equipment in the event emergency work must be done, ie. Fixing fence due to accident or storm damage.

Contractor may add or take sheep away from herd as the land, weather and management require granted the flock remains capable of maintaining weeds and grass at an acceptable height.

Contractor is responsible for mobilization, healthcare, animal husbandry, providing adequate potable/ fresh water for the number of sheep on site.

Contractor will check on sheep and grass levels a minimum of once weekly. Contractor is responsible for maintaining farm animal insurance and carrying [name of solar company] and involved parties as additional insured clients.

Contractor is responsible for any damages to personal or public property caused by sheep.
Typically sheep are brought to site in May and removed in October however sheep may be mobilized to the site earlier or removed earlier based on contractor's recommendation and site conditions.

Contractor must provide contact information for the herd manager at each access point in a permanent and visibly manor and also have sufficient safety information for other contractors accessing the site and a safety brief with their management