

NEW YORK STATE BOARD ON ELECTRIC GENERATION
SITING AND THE ENVIRONMENT

In the Matter of

Application of Trelina Solar Energy Center, LLC for a Certificate of Environmental
Compatibility and Public Need Pursuant to Article 10 to Develop, Construct and Operate a solar
Generating Facility in the Town of Waterloo, Seneca County.

Case No. 19-F-0366

April 16, 2021

Prepared Testimony of:

Michael Saviola
Associate Environmental Analyst
New York State Department of
Agriculture & Markets
1530 Jefferson Rd.
Rochester, NY 14623
P: (585) 427-0221

Albany Office:
10B Airline Dr.
Albany, NY 12235
P: (518) 457-1059

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Witness Introduction

Q: Please state your name, employer and business address.

A: Michael Saviola, New York State Department of Agriculture and Markets (the Department), 1530 Jefferson Rd., Rochester, NY 14623.

Q: In what capacity are you employed by the Department?

A: I am an Associate Environmental Analyst in the Division of Land and Water Resources.

Q: Please summarize your educational background and professional experience.

A: I received B.S. and M.S. degrees in Natural Resources Management from the SUNY College of Environmental Science and Forestry (ESF) in Syracuse, NY. Prior to working for the Department, I worked for two private consulting engineering firms in Syracuse, NY while attending Graduate School at ESF. I also worked as professional staff for the Westchester County Department of Planning and the Westchester County Soil and Water Conservation District, in which capacity I worked on a variety of projects designed to manage environmental and other impacts related to agricultural land in New York City's water supply watershed. I have been employed by the Department of Agriculture and Markets for approximately 15 years.

Q: Please describe your duties with the Department.

A: I specialize in agricultural land use issues. I am responsible for reviewing the impacts of a variety of major utility-scale construction projects on agricultural lands, among other things. As relevant to this proceeding, I am responsible for evaluating the potential impact of solar generation and electric collection project infrastructure on agricultural lands. My primary responsibilities with the Department include the review, evaluation, and necessary follow-up (Certification and Compliance) pertaining to proposed

1 commercial wind energy generating facilities, commercial solar electric generating
2 facilities and high voltage electric transmission line right-of way projects pursuant to
3 Article 7 and Article 10 of the NYS Public Service Law. When reviewing these projects,
4 I focus on identifying possible impacts to agricultural resources and the farming
5 operations in the vicinity. When a proposed project appears to have a negative impact on
6 agriculture, as a Statutory Party under Article 7 and Article 10, I advise the project
7 applicant and/or approving Commission or Board of the possible alternatives,
8 construction techniques, and mitigation measures that would reduce or eliminate such
9 impacts.

10 **Q: Do you have any professional certifications?**

11 **A:** In addition to an advanced degree in Natural Resources Management, I am certified by
12 the North American Lake Management Society as a Certified Lake Manager. I am also
13 certified by Envirocert International as a Certified professional in Erosion and sediment
14 Control (CPESC) In -Training (IT) status.

15 **Q: Have you testified before the Public Service Commission before?**

16 **A:** Yes, I testified in Case numbers 11-T-0534, 13-T-0077, 14-F-0490, and 16-F-0328. I
17 also provided written testimony for 4 other cases involving commercial wind energy
18 projects. Additionally, I have been an active participant in dozens of utility-scale
19 projects involving natural gas pipelines and high voltage overhead electric transmission
20 lines regulated under Article VII of the NYS Public Service Law. On behalf of the
21 Department, I have also been involved in the review of construction monitoring and
22 restoration of 12 commercial wind energy generation facilities in Western NY, the North
23 Country, and the southern tier. I am also involved in the review of proposed wind energy

1 projects, and other proposed commercial solar electric generating facilities pursuant to
2 Article 10 of the NYS Public Service Law.

3 **Direct Testimony**

4
5 **Q: What are your responsibilities in this proceeding?**

6 **A:** My responsibilities in this proceeding include reviewing the Article 10 Application and
7 supporting pre-construction drawings and other documents submitted by the Applicant,
8 Trelina Solar Energy Center LLC (Trelina) during the various phases of project review
9 under Article 10. I have also reviewed and provided comments on the proposed Site
10 Engineering and Environmental Plan (SEEP) and proposed certificate conditions. In
11 addition, I visited the proposed site of the project in February of 2021 and conducted a
12 detailed desktop review of the Project.

13 **Q: What was the purpose of your review and evaluation in this proceeding?**

14 **A:** To determine the nature and extent of potential impacts of the proposed Project on
15 agricultural land. More specifically, to determine if the Project as proposed follows the
16 Department's Guidelines for Agricultural Mitigation for Solar Energy Projects.

17 **The Department strives to minimize the permanent conversion of productive agricultural**
18 **lands, and where not possible, offers technical assistance to reduce and/or mitigate**
19 **impacts to agricultural land.**

20 **Q: What is the Department's position on utility-scale solar energy generation facilities**
21 **proposed for development in active agricultural lands?**

22 **A:** The Department does not have an opinion on the need for energy generation or the
23 transmission of energy. The Department discourages the conversion of farmland to a

1 non-agricultural use. This effort is in accordance with Section 4 of Article 14 of the
2 2018 New York State Constitution, which provides for the conservation of agricultural
3 lands, as well as NYS Agriculture and Markets Law (AML), Article 25-AA, §300, which
4 more specifically states:

5 *“It is, therefore, the declared policy of the state to conserve, protect and*
6 *encourage the development and improvement of its agricultural land for*
7 *production of food and other agricultural products. It is also the declared policy*
8 *of the state to conserve and protect agricultural lands as valued natural and*
9 *ecological resources which provide needed open spaces for clean air sheds, as*
10 *well as for aesthetic purposes.”.*

11 The Department, specifically the Agricultural Protection Unit in which I am assigned to,
12 identifies this statute as a mission statement for the Unit. However, the Department also
13 recognizes New York State’s 2019 Climate Leadership and Community Protection Act
14 (CLCPA), more specifically the initiative for the development of utility-scale solar
15 facilities and is prepared to support the general initiative.

16 The Department understands that although the legislative intent of AML supports the
17 preservation of NYS agricultural resources for agricultural purposes, there is currently no
18 law or regulation acting on such intent. Department policies are in place to act on the
19 legislative intent. In past PSL Article 10 cases, the Department has stated its position
20 with respect to policies pertaining to the conversion of agricultural lands, however,
21 Administrative Law Judges decisions in prior Solar cases have not recognized the policy
22 as a requirement for the proceeding. Despite this fact and considering that the Department

1 is a statutory party to this and other proceedings under the PSL, the Department will
2 continue to protest the conversion of agriculture land to a non-agricultural use.

3 Prior to large-scale solar development, the Department has not been associated with PSL
4 Article 10 cases which convert large acreages of agricultural lands to non-agricultural
5 uses. Commercial wind generating facilities generally allow for farming activity to
6 continue once the project is in-service. In comparison, the solar industry arguably
7 eliminates the ability to perform normal viable agricultural operations within, and
8 potentially immediately surrounding the facility. This constitutes a permanent conversion
9 to a non-agricultural use. Due to increasing NYS energy goals encouraging renewable
10 energy development, we see no reason facilities will not be upgraded and re-leased to
11 maintain the growing or static renewable energy demand, in this case, 35 years from
12 energization. The Department further asserts that as long as NYS incentives for the
13 development of renewable energy exists, the complete decommissioning of solar electric
14 energy generation, and full resumption to agricultural use is not likely to occur.

15 The Department recognizes the financial benefits of participating landowners; however,
16 farm operator(s) lease payments are not viewed by the Department as a benefit to
17 agriculture when agricultural crops, livestock and livestock products are downsized or
18 eliminated.

19 **Q: What Department policies that are subject to this proceeding?**

20 **A:** As previously mentioned, The Department discourages the conversion of farmland to a
21 non-agricultural use. However, to support the New York State's CLCPA initiatives, the
22 Department has developed a siting policy supportive of solar development efforts on

1 agricultural lands if the proposed projects are properly sited on lands other than the
2 State's most productive farmland. The Department's goal is for projects to limit the
3 conversion of agricultural areas within the Project Areas, to no more than 10% of soils
4 classified by the Department's NYS Agricultural Land Classification mineral soil groups
5 1-4, generally Prime Farmland soils, which represent the State's most productive
6 farmland. Soils classified with the soil groups 5-10 are identified as having soil
7 limitations. The only responsible position the Department can take to stay true to the
8 AML Article 25-AA §300 and to support the NYS CLCPA renewable energy initiative is
9 to ensure the preservation of agricultural areas involving soils classified as soil groups 1-
10 4 for the production for food and fiber, as well as not object to proposed development on
11 lesser productive soils, i.e. agriculture lands comprised on classified mineral soil groups
12 5-10. Additionally, the Department requires the Applicant to follow *Department*
13 *Guidelines* for constructing solar facilities in agricultural lands. Draft Certificate
14 Condition 92 identifies the Applicant's agreement to comply with Department's
15 Guidelines entitled Solar Energy Projects - Construction Mitigation for Agricultural
16 Lands (Revision 10/18/2019), specifying construction mitigation techniques intended to
17 protect and restore agricultural soil resources. Furthermore, the Applicant has agreed to
18 consult with the Department for any potential deviation from the *Guidelines* to develop
19 applicable construction and restoration alternatives.

20 **Q: What are the primary agricultural impacts associated with the construction of a**
21 **commercial solar energy generation facility on agricultural lands?**

22 **A:** The construction of a commercial solar energy generation facility within agricultural land
23 constitutes a permanent conversion of farmland to an industrial (non-agricultural) use.

1 The development of solar arrays and ancillary facilities (including panels, panel racking,
2 transformer/inverter equipment pads, access roads, security fencing, substations, energy
3 storage options, operation and maintenance facilities, planted visual screening areas, etc.)
4 makes it infeasible to continue farming on viable agricultural land within the Facility
5 area. Furthermore, the location of project-related infrastructure in agricultural fields
6 create obstacles that the farm operator will have to avoid during numerous types of
7 agricultural equipment operations; including, but not limited to, cultivation, seeding,
8 nutrient recycling or top-dressing, weed management, harvest, etc. The difficulty
9 created by the obstacles will likely force the farm operator to abandon use of the field.

10 Impacts to agricultural lands remaining outside of the security fencing also has a highly
11 likelihood to become abandoned and/or orphaned. More specifically, these generally
12 narrow areas outside the fenced facility are created by development limitations
13 (municipal setbacks, buffers, etc.) and limit the conduct of mechanized farming. The
14 scenarios cited above create narrow strips of land that although may be available to
15 some agricultural producers are unattractive for most large-scale farm operators, as they
16 are inefficient to harvest crops due to the limitations of acreage and maneuverability for
17 modern large-scale mechanized farming equipment. These “indirect” impacts often
18 result in the loss of additional farmland which, in turn, result in a decrease in
19 mechanized farming efficiency leading to a reduction in production of crops, livestock
20 and livestock products.

1 **Q: What are the primary agricultural impacts associated with the construction of a**
2 **commercial solar energy generation facility on agricultural lands?**

3 **A:** The primary agricultural impact associated with the construction of a commercial solar
4 energy generation facility is the conversion of farmland to a non-agricultural use. This
5 conversion is the result of the construction of project-related infrastructure including
6 access roads, commercial-scale solar arrays, electric collection lines, collection
7 substation, switchyard, fencing, temporary work areas, staging areas, and transmission
8 lines, which make it impossible to actively farm the land.

9 **Q: How does the siting of commercial solar project-related infrastructure impact**
10 **agricultural operations?**

11 **A:** There are several potential impacts. As dairy and cash crop farming operations become
12 larger, the equipment used for planting and harvesting has become larger in order to
13 achieve efficiencies and enhancements in crop production yields. Often, this equipment
14 can include two pieces of harvesting or tillage equipment pulled by a single tractor. As
15 the size of the farming equipment has increased over the years, the turning radius for the
16 equipment has also increased. The location of access roads and other project-related
17 infrastructure in an agricultural field creates an obstacle which the farm operator has to
18 avoid during field planting and harvesting operations. Placement of project-related
19 infrastructure in agricultural fields can result in a loss of productive acreage as well as a
20 decrease in field operation efficiency or viability with the larger planting and harvesting
21 equipment because of the increased turning radii required. Depending on the location of
22 project-related infrastructure, primarily solar arrays and access roads, the loss of acreage

1 available to farming, and the loss of farming efficiency or farm viability can be
2 significant.

3 **Q: Explain how the location of access roads can impact agricultural operations?**

4 **A:** The construction of access roads in agricultural fields may, in some cases, divide larger
5 fields into smaller, less workable fields. This could potentially result in a loss of
6 efficiency navigating equipment around project infrastructure. Also, if roads are not
7 constructed even or level with the adjacent fields, damage to mechanized farming
8 equipment will result. In most cases, properly planned and constructed access roads can
9 benefit farming operations by providing enhanced field access for farming equipment. In
10 most cases, however, the construction of access roads adjacent to active farm fields
11 enhances farm viability by affording more efficient and safe access into fields by
12 mechanized farming equipment.

13 **Q: Have you reviewed the exact locations where the Applicant proposes to construct**
14 **access roads adjacent to and through agricultural fields?**

15 **A:** Yes. I have conducted a desktop analysis of the project layout, in addition to the site
16 visits conducted in February of 2021.

17 **Q: What can be done to reduce or eliminate potential agricultural impacts from access**
18 **roads adjacent to or through agricultural lands?**

19 **A:** In accordance with Department Guidelines, the Applicant should design access roads in a
20 manner that does not divide larger fields into smaller fields. Access roads should be
21 constructed 'at grade', meaning the stone surface should be level with the surrounding

1 adjacent field or slightly crowned. This will allow for enhanced field access and reduce
2 or eliminate potential damage to mechanized farming equipment. In accordance with our
3 Solar Construction *Guideline*, access roads should follow field edges or utilize existing
4 farm access roads or tractor paths in order to reduce agricultural impacts. In some cases,
5 site topography, and other environmental constraints such as wetland and grassland bird
6 impacts are the primary driver for deviating from the Department's Solar Construction
7 Guidelines. In many cases, these impacts can result in the permanent conversion of
8 farmland to a nonagricultural use.

9 **Q: Does the facility layout follow the Department's Solar Guidelines and does it align**
10 **with the Department's siting policy?**

11 **A:** In general, access roads should follow field edges and the solar arrays should not be sited
12 in a manner in which agricultural areas become orphaned as described in my testimony
13 above. Additionally, the Department finds the Applications proposed siting is not
14 consistent with the Department's siting policy because it will occur on more than 10% of
15 active farmland classified as Prime Farmland (Generally, Mineral Soil Groups 1-4)
16 within the proposed limits of disturbance. The Department estimates that greater than
17 68% of the of the limits of disturbance includes the conversion of farmland classified as
18 Prime Farmland Soil (Mineral Soil Groups 1-4). The Application states that solar panels
19 will cover 325 acres, however areas located outside of fenced areas will likely become
20 fallow or orphaned as a result of screening requirements and setbacks. **This will**
21 **eliminate crop production on much more than 325 acres of agriculture lands for a**
22 **minimum of 30 years -worth of crop yields from some of the most productive farmland**
23 **soils in the State.** While the Applicant describes the impact to agricultural land and

1 farming, in general, as temporary, a 30-year loss of the production of crops, livestock and
2 livestock products constitutes a permanent conversion to a nonagricultural use. Although
3 a decommissioning plan has been prepared, there is virtually no reasonable assurance that
4 the project will be decommissioned and that the full resumption back to agricultural use
5 will be reestablished.

6 **Q: What can be done to reduce or eliminate potential agricultural impacts associated**
7 **with the construction of the proposed Project?**

8 **A:** The Department recommends exploring some combination of the following technical
9 mitigation activities to reduce the significance of the agricultural impact within the
10 facility site:

- 11 • Reduction in the scope of the Project
- 12 • Incorporation of Agricultural Co-utilization
- 13 • Density of panels and design changes to reduce the facility footprint
- 14 • Alternative siting

15 **Q: Are there any areas where solar array and underground collection circuits could**
16 **have an impact on engineered drainage features constructed on agricultural land?**

17 **A:** Yes. Through the course of my review of this Application, I reviewed historic aerial
18 photography. Based on my review, I have identified what appears to be subsurface
19 drainage (drain tiles) or ‘pattern drains’ observed on 10 separate tax parcels having solar
20 arrays and buried collection proposed.

1 **Q: Please describe the origin and purpose of subsurface drains and indicate why they**
2 **are relevant to this proceeding.**

3 **A:** In agriculture, tile drainage is a type of drainage system that removes excess water
4 from soil below its surface. The soils of this region are generically classified as
5 glaciolacustrine deposits, many with a seasonally high or “perched” water table. Drain
6 tiles remove excess water from the water table so crops can more efficiently develop their
7 roots. Artificially drained fields are known to increase farming efficiency by allowing
8 wetter soils to dry out more quickly to make it available to mechanized tillage earlier in
9 the growing season, and it is also known to increase crop yields. Drain tiles or artificial
10 drainage is very common in this region of the state due to poor drainage characteristics of
11 the presence of highly glaciated soils. Tile drainage was first introduced in the United
12 States in 1838 when a farmer from Scotland installed drain tiles on farmland in Seneca
13 County which, in effect, increased crop yields exponentially. Much of the drain tile or
14 pattern drains observed on historic aerial photography is likely original clay tile
15 manufactured and installed by hand on farmland in Seneca county in the late 1800’s to
16 the early to mid-1900’s. Seneca County is known as the birthplace of subsurface drain
17 tile in this country and the expansion of drainage systems was an important technical
18 aspect of Westward Expansion in the United States in the 19th century.

19 **Q: Please describe your experience with subsurface drain tiles and drain tile repairs.**

20 **A:** Beginning in 2006 to 2010, I was involved in a 96-mile FERC- regulated interstate
21 natural gas pipeline project that extended from Victor to Corning, NY. Much of it
22 traversed through the Finger Lakes Region. Designated crews were tasked with making

1 the needed repairs to drain tile systems that were severed by pipeline construction. In
2 fact, the Department has developed a series of Natural Gas Pipeline Construction
3 Guidance documents which include specifications for the repair of severed drain lines.

4 Most recently, I was involved with the construction of a 5-mile long fuel gas transmission
5 line project in Geneva and Phelps, NY. It was case number 17-T-0710 and final
6 restoration was concluded last summer. Original clay tile was encountered in agricultural
7 fields throughout the project. The most of which were encountered in a rotation crop
8 field south of Packwood Road in parcel number 91.00-1-3.100 owned by Richard Lyon.
9 This field is directly adjacent to the northwestern portion of the project site. Based on the
10 number of clay tiles I observed severed or affected by subsurface construction in this
11 location, and based on the presence of what appears to be subsurface drainage observed
12 in a review of historic aerial orthophotography, it is not unreasonable to conclude that a
13 similar level of impact could reasonably be expected from the installation of project-
14 related components including buried collection lines, racking support poles and possibly
15 designated HDD road crossings adjacent to agricultural fields in this project.

16 **Q: What can be done to reduce or mitigate potential damage to existing subsurface**
17 **drainage systems encountered during construction?**

18 **A:** On both the FERC-regulated and PSC-Certified pipeline examples cited earlier in my
19 testimony, Applicants developed and implemented detailed drain tile repair plans specific
20 to each project. In both examples, each Applicant retained the services of an agricultural
21 drainage specialist to coordinate with local landowners (project participants), the County
22 Soil and Water Conservation District (SWCD), and the USDA-Natural Resources

1 Conservation Service (NRCS) in order to identify known locations and outlets for
2 subsurface drains and larger pattern drain networks. Based on my experience, it is quite
3 common for those local offices to have some record or 'As-built' drawings, especially if
4 the drains were designed by and, in many cases, cost-shared by the County or the USDA
5 for their installation. In the past, I have helped facilitate this process, and I would be
6 willing to offer the same assistance in this proceeding. Based on my 15 years of
7 experience overseeing subsurface linear construction activities, the most efficient and
8 effective way to repair without interrupting construction schedules is to make the repair
9 immediately upon the completion of cable installation prior to backfilling the trench. Or
10 flag and geolocate the locations and return later in the project to make the necessary
11 repairs. The services of a qualified agricultural drainage specialist should be retained by
12 the applicant to coordinate and oversee these activities in the field. Drain tile repairs
13 should be done under close supervision of third-party agricultural drainage specialist in
14 accordance with the Applicant-prepared drain tile repair plan prepared in conjunction
15 with the drain tile repair specifications contained in the Department's Right-of Way
16 Construction and Restoration Guidelines for Natural Gas Pipeline projects.

17 **Q: Do you have any other concerns related to buried electrical collection lines in**
18 **agricultural fields?**

19 **A:** Yes. There are nearly eight miles of collection lines sited within land designated as
20 agricultural land. It is important for the Applicant to be able to obtain the property rights
21 for enough room or workspace along collection routes in order to adequately stockpile
22 topsoil. Topsoil thicknesses vary throughout the project but on average there is 8 to 10
23 inches of topsoil. In some areas there is less. I recommend an additional temporary

1 workspace width of 10 feet along the collection runs located in agricultural fields. This
2 will help to alleviate the potential for topsoil becoming mixed with infertile subsoil and
3 the additional 10 foot width will allow for the adequate stockpiling of topsoil
4 immediately adjacent to the collection trench and workspace, along the opposite side of
5 the ‘working side’ of the collection trench. I have witnessed the installation of buried
6 collection lines on the dozen or so commercial wind projects I have been involved with
7 around the state and with each project almost always the collection corridor’s Limits of
8 Disturbance or LOD were too narrow to allow for enough space to adequately strip and
9 temporarily stockpile topsoil in agricultural lands. It is understood that Applicants
10 typically try to limit the amount of ground disturbance on any given construction activity,
11 but in this case, more room to stockpile topsoil is better than not enough room. This is
12 why we are requesting an Additional Temporary Workspace (ATWS) width of 10 feet
13 along collection lines in agricultural fields.

14 **Q: Please describe the need for a designated, qualified, full -time agricultural monitor**
15 **and agricultural drainage specialists for projects of this nature.**

16 **A:** This project has the potential to permanently impact a large amount of agricultural land if
17 restoration is not overseen by a qualified agricultural resource professional. I have
18 extensive knowledge of soils in this region of the State from our involvement with the
19 construction and restoration of natural gas pipeline projects in the Finger Lakes Region.
20 This region of New York is complicated by soils having a very thin layer of topsoil,
21 underlain by a dense layer of glacial till, most of which is restricted by a dense fragipan,
22 shallow depth to lithic bedrock, or perched high water table. These unique and complex
23 soil characteristics will require the services of a qualified agricultural professional or

1 agricultural drainage specialist who has a degree or professional background in soil
2 conservation, hydrology and/or agronomy. I have been involved with projects where the
3 Applicant's tried unsuccessfully to use terrestrial ecologists, transportation engineers or
4 wetland consultants to serve in this role and in those cases, topsoil resource protection
5 measures and agricultural restoration activities were not initially conducted in accordance
6 with Department Guidelines. They just don't have the same skillset needed to solve
7 complex drainage issues in an agricultural setting. For a project of this scale, the skillset
8 of a full time, qualified agricultural drainage specialist will be needed to assist the Project
9 Environmental Monitor.

10 **Q: Does this conclude your testimony?**

11 **A: Yes.**