

Caiazza Comment Calling for a Moratorium on Utility-Scale Solar Development

Summary

I am writing to recommend that the Climate Action Council impose a moratorium on the development of utility-scale solar projects until permitting requirements have been established for responsible solar siting and protection of prime farmlands. Although the New York State Department of Agriculture and Markets (Ag & Market/Department) has policies on solar energy projects, the Article Ten [Trelina Solar Project](#) application to build and operate an 80-megawatt solar farm in the Town of Waterloo, Seneca County was approved despite the fact that it did not adhere to that policy. At a minimum all utility-scale projects should adhere to those policies.

One of my biggest concerns with the Climate Leadership and Community Protection Act (Climate Act) is that there hasn't been any kind of plan for development of the renewable energy resources necessary for to meet the energy transition goals. As a result, there has been a land rush of utility-scale development projects on prime farmland because it is easiest and there isn't a state policy preventing it. This is particularly disappointing because, according to [New York's 10 GW Distributed Solar Roadmap: Policy Options for Continued Growth in Distributed Solar](#), there is a plan to protect farmlands from distributed solar development.

In addition, there have been other initiatives to develop responsible solar development guidelines. The American Farmland Trust [Smart Solar Siting on Farmland: Achieving Climate Goals While Strengthening the Future for Farming in New York](#) document and the New York State Energy Research & Development Authority [Agricultural Technical Working Group](#) both have developed or are developing recommendations for siting requirements that would protect farming communities and prime farmland.

Until those policies are in place it is appropriate for a moratorium. That action would not only protect communities and farmland but it would also help meet Climate Act goals. Using the Draft Scoping Plan solar projections and land use estimates for solar projects in the Article Ten queue in 2020 suggest that the smallest Scoping Plan scenario solar equipment area covered will be 353 square miles. Moreover, there are CLCPA considerations. The CLCPA has a "net-zero" target by 2050 that requires 15% sequestration. One of the strategies to meet that target is soil carbon management. Taking productive farmland out of production hinders that goal.

Introduction

I became aware of the particular issues of utility-scale solar development on agriculture after I had a couple of people contact my [blog](#) describing issues that they had and suggested that I look into the issue. The [problems](#) that they raised are real, the solutions are available, but in the rush to develop as many renewable resources as quickly as possible the State of New York has dropped the ball on responsible utility-scale development.

Responsible Solar Development

The reason that the State is developing solar energy resources is to comply with the Climate Act. At this time there are no specific siting requirements for utility-scale solar projects that protect farming communities and restrict conversion of prime farmland in agricultural use to solar panels. In my opinion, however, recent developments point to the obvious conclusion that those requirements are inevitable.

On March 10, 2022 Michael Saviola submitted [prepared testimony](#) on the Garnet Energy Center application that included a summary of the Ag & Markets solar energy siting policies. He notes that the Department of Ag and Markets does not have an opinion on the need for utility-scale solar generation but (Page 6, line 3):

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

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

After acknowledging that the Department is aware of the Climate Act and supports the general initiative, the testimony goes on to state that these projects are permanent installations (Page 6, line 20):

The Department will continue to discourage the conversion of agriculture land to a non-agricultural use. Prior to large-scale solar development, the Department has not been associated with PSL 22 Article 10 cases that constitute large, long-term conversion of agricultural lands to non-agricultural uses. Commercial wind generating facilities generally allow for farming activity to continue once the project is in-service. In comparison, the solar industry arguably eliminates the ability to perform normal viable agricultural operations within, and potentially immediately surrounding the facility. This constitutes a long-term conversion to a non-agricultural use. Due to increasing NYS energy goals encouraging renewable energy development, we see no reason facilities will not be upgraded and re-leased to maintain the growing or static renewable energy demand, in this case, 35 years from energization. The Department further asserts that as long as NYS incentives for the development of renewable energy exists, the complete decommissioning of solar electric energy generation, and full resumption to agricultural use is not likely to occur.

In response to the question "What Department policies are subject to the proceeding", he responded (Line 17, page 7):

As previously mentioned, The Department discourages the conversion of farmland to a non-agricultural use. However, to support the New York State's CLCPA initiatives, the Department has developed a siting policy supportive of solar development efforts on agricultural lands *if (his emphasis added)* the proposed projects are properly sited on lands other than the State's most

productive farmland. The Department's goal is for projects to limit the conversion of agricultural areas within the Project Areas, to no more than 10% of soils classified by the Department's NYS Agricultural Land Classification mineral soil groups 1-4, generally Prime Farmland soils, which represent the State's most productive farmland. Soils classified with the soil groups 5-10 are identified as having soil limitations. The only responsible position the Department can take to stay true to the 7 AML Article 25-AA §300 and to support the NYS CLCPA renewable energy initiative is to ensure the preservation of agricultural areas involving soils classified as soil groups 1-9 for the production for food and fiber, as well as not object to proposed development on lesser productive soils, i.e. agriculture lands comprised on classified mineral soil groups 5-10. Additionally, the Department requires the Applicant to follow Department Guidelines for constructing solar facilities in agricultural lands. Draft Certificate Condition 47 and 95 identifies the Applicant's agreement to comply with Department's Guidelines entitled Solar Energy Projects - Construction Mitigation for Agricultural Lands (Revision 10/18/2019), specifying construction mitigation techniques intended to protect and restore agricultural soil resources. Furthermore, the Applicant has agreed to consult with the Department for any potential deviation from the Guidelines to develop applicable construction and restoration alternatives.

In response to the question: What are the primary agricultural impacts associated with the construction of a commercial solar energy generation facility on agricultural lands the testimony states: (Line 16, page 8)

The construction of a commercial solar energy generation facility within agricultural land constitutes a long-term impact and permanent conversion of farmland to an industrial (non-agricultural) use. The development of solar arrays and ancillary facilities (including panels, panel racking, transformer/inverter equipment pads, access roads, security fencing, substations, energy storage options, operation and maintenance facilities, planted visual screening areas, etc.) makes it infeasible to continue farming on viable agricultural land within the Project area. Furthermore, the location of project-related infrastructure- panel spacing and alignment in agricultural fields create obstacles that the farm operator will have to avoid during numerous types of agricultural equipment operations; including, but not limited to, cultivation, seeding, nutrient recycling, weed management, harvest, etc. The difficulty created by the obstacles forces the farm operator to abandon use of the field.

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

On page 10 line 8, the testimony asks the question How does the siting of commercial solar project-related infrastructure impact agricultural operations?

There are several potential impacts. Farms demand a certain acreage to meet their business, long-term staffing, and environmental objectives and to remain viable. If leased land is abruptly lost to another use, such as a solar installation, the farm will grow and market less produce, grains, forages, and livestock products; may have to downsize and lay-off employees; and could be challenged to have adequate acreage for proper manure nutrient recycling. Such changes may force the farm to close. As in other sectors, farmers seek improvements to management and efficiency to remain competitive and viable. Larger, more efficient tillage, planting, crop management, and harvesting equipment is one example of how farmers have adapted to remain viable and more productive. Often, this equipment can include two pieces of harvesting or tillage equipment pulled by a single tractor. As the size of the farming equipment has increased over the years, the turning radius for the equipment has also increased. The location of access roads and other project-related infrastructure in an agricultural field creates an obstacle which the farm operator has to avoid during field planting and harvesting operations. Placement of project-related infrastructure in agricultural fields can result in a loss of productive acreage as well as a decrease in field operation efficiency or viability with the larger planting and harvesting equipment because of the increased turning radii required. Depending on the location of project-related infrastructure, primarily solar arrays and access roads, the loss of acreage available to farming, and the loss of farming efficiency or farm viability can be significant and, in some cases, devastating to farms and for food production.

In addition, Saviola's testimony describes a document on responsible siting of utility-scale solar development:

The [American Farmland Trust published a study](#) in February 2022 on smart solar siting on farmland in New York State. This study was completed with input from, and collaboration with, advisory members from government and non-governmental organizations, solar industry advocates, not-for profit land trusts, solar developers, and academia. The study was conducted to develop smart solar strategies to meet climate goals while supporting its agricultural economy and future food security. The report reveals trends that show that good quality farmland has been a first-choice site for solar development. As in with this proceeding here. The lowest hanging fruit. The study strongly recommends against siting solar infrastructure on prime farmland or farmlands comprised of Mineral Soil Groups 1-4 and to site infrastructure on marginal lands. The Study also indicates that farmers are interested in agrivotalics. The Study concludes by stating that the choices we make today about where and how solar projects, particularly large-scale facilities, are sited on active farmland will make a difference to rural economies and influence our ability to farm and grow food in New York to feed ourselves and reap environmental benefits now and into the future.

There has been progress on other initiatives for responsible solar siting that should be considered in the Garnet permit proceeding. The [New York's 10 GW Distributed Solar Roadmap: Policy Options for Continued Growth in Distributed Solar](#) document includes a section on Agricultural Protection and Land Use (Section III.a.4):

Farmland protection and the maintenance of a vibrant agricultural economy are important State policy goals. New York State recognizes the importance of collaboration between the agriculture and clean energy sectors as a critical part of the State's overall decarbonization strategy. NYSERDA works in close coordination with the Department of Agriculture and Markets (NYSAGM) and other stakeholders to responsibly support the development of renewable energy projects. In the 2019 NY-Sun Expansion Petition, NYSERDA described the interaction of distributed solar with agriculture in New York:

“The majority of projects in [the Upstate C/I] market sector are expected to be ground-mounted arrays ranging between 5 MW and 7.5 MW in size, which occupy approximately 20 – 25 acres of land, typically on rural properties that are leased or sold to the solar developer by the landowner. Notably, this includes properties that are currently used, or could potentially be used for, agricultural production. While NYSERDA expects that the total agricultural acreage utilized for distributed solar projects will remain modest as compared to total farmland in New York State, through its implementation efforts, NYSERDA will act to ensure that negative impacts to farmland and the State’s agricultural economy are avoided and minimized, and where they are unavoidable, mitigated. NYSERDA, working with partner agencies and stakeholders, has already taken multiple actions along these lines and will pursue additional actions under an expanded NY-Sun program.” (This section is from the NY-Sun Petition, p. 21.)

In the subsequent two years, NYSERDA and NYSAGM have continued to work in partnership to put in place requirements for solar projects to minimize impact to farming and agricultural soils. (These requirements include, inter alia: complying with New York State Agriculture and Markets Law; submitting appropriate notices to NYSAGM and local Agricultural and Farmland Protection boards; executing a copy of the Guidelines for Solar Energy Projects – Construction Mitigation for Agricultural Lands document published by NYSAGM; and making a Mitigation Fund payment or committing to other mitigation measures where impacted agricultural soils exceed 30 acres.) These requirements have already demonstrated their effectiveness: In 2021 to date, all 50 distributed solar projects subject to these requirements, totaling 1,037 acres of affected area, have committed to avoiding and minimizing impacts to prime soils in consideration of the solar layout. For 48 of these projects, all unaffected portions of the farms hosting the solar projects, a total of 3,385 acres, will remain in agricultural production. Many of the farmers hosting projects on a portion of their land report that the steady lease revenue from the solar projects has enabled them to continue farming on most of their property despite challenging agricultural economic pressures.

Finally, the New York State Energy Research & Development Authority [Agricultural Technical Working Group](#) is working on a “Smart Solar Siting” scorecard to encourage responsible siting of renewables on agricultural land. The scorecard lists five areas to avoid:

- Avoid prime agricultural soils
- Farmland in active cultivation
- Forested land
- Wetlands
- Grass lands

It is in the best interests of New York State to institute policies that mandate responsible solar development especially for large utility-scale solar projects. Using the Draft Scoping Plan solar projections and land use estimates for solar projects in the Article Ten queue in 2020 suggest that the smallest Scoping Plan scenario solar equipment area covered will be 353 square miles. Moreover, there are CLCPA considerations. The CLCPA has a “net-zero” target by 2050 that requires 15% sequestration. One of the strategies to meet that target is soil carbon management. Taking productive farmland out of production hinders that goal.

Utility-Scale Solar

I applaud the efforts to implement responsible siting requirements for distributed solar project by NYSERDA and NYSAGM because it appears that they have offered a path forward for development that protects farming communities and farmland. There is a major problem however. The majority of these distributed solar projects are “expected to be ground-mounted arrays ranging between 5 MW and 7.5 MW in size, which occupy approximately 20 – 25 acres of land”. The roadmap notes that “In 2021 to date, all 50 distributed solar projects subject to these requirements, totaling 1,037 acres of affected area, have committed to avoiding and minimizing impacts to prime soils in consideration of the solar layout.” As noted above utility scale projects will cover much more land and they are subject to no such constraints.

Trelina Utility-Scale Solar Project

For example, consider the recently permitted utility-scale [Trelina Solar Project](#) that is an 80 megawatt (MW) solar farm in the Town of Waterloo, Seneca County, New York and its impact on prime farmland. The petition for [New York Department of Public Service Case Number: 19-F-0366](#) 1001.4 [Exhibit 4, Land Use](#) states that the overall Project Area is 1,067 acres and “only approximately 44.4 percent will be used for Project Components within a fenced area of approximately 418 acres to generate 79.5 to 80 MW of renewable energy”.

The Department of Ag and Markets [prepared testimony](#) on this application notes that “The Department’s goal is for projects to limit the conversion of agricultural areas within the Project Areas, to no more than 10% of soils classified by the Department’s NYS Agricultural Land Classification mineral soil groups 1-4, generally Prime Farmland soils, which represent the State’s most productive farmland.” Their description of the project is in stark contrast to the developer’s description. In particular, the testimony response to the question whether the facility layout follows the Department’s Solar Guidelines and does it align with the Department’s siting policy (Line 11, page 11):

In general, access roads should follow field edges and the solar arrays should not be sited in a manner in which agricultural areas become orphaned as described in my testimony above. Additionally, the Department finds the Applications proposed siting is not consistent with the Department’s siting policy because it will occur on more than 10% of active farmland classified as Prime Farmland (Generally, Mineral Soil Groups 1-4) within the proposed limits of disturbance. The Department estimates that greater than 68% of the of the limits of disturbance includes the conversion of farmland classified as Prime Farmland Soil (Mineral Soil Groups 1-4). The Application states that solar panels will cover 325 acres, however areas located outside of fenced areas will likely become fallow or orphaned as a result of screening requirements and

setbacks. This will eliminate crop production on much more than 325 acres of agriculture lands for a minimum of 30 years -worth of crop yields from some of the most productive farmland soils in the State. While the Applicant describes the impact to agricultural land and farming, in general, as temporary, a 30-year loss of the production of crops, livestock and livestock products constitutes a permanent conversion to a nonagricultural use. Although a decommissioning plan has been prepared, there is virtually no reasonable assurance that the project will be decommissioned and that the full resumption back to agricultural use will be reestablished.

According to the [press release](#) announcing the Siting Board's decision to approve the project, the Board "follows a detailed review and robust public participation process to ensure that the solar farm meets or exceeds all siting requirements". To summarize the information above, the Ag and Markets testimony notes that "The Department's goal is for projects to limit the conversion of agricultural areas within the Project Areas, to no more than 10% of soils classified by the Department's NYS Agricultural Land Classification mineral soil groups 1-4, generally Prime Farmland soils, which represent the State's most productive farmland." It also notes that "The Department estimates that greater than 68% of the of the limits of disturbance includes the conversion of farmland classified as Prime Farmland Soil". Given that the Ag and Markets testimony clearly explained that the project does not meet their siting requirements this statement is false.

Garnet Utility-Scale Energy Center

The [Garnet Energy Center](#) is a proposed 200-megawatt solar project with 20 megawatts of energy storage located in the town of Conquest in Cayuga County, NY being developed by the same company that is building the Trelina project. The Article Ten public comment period for the project is open until early May and On March 10, 2022 Michael Saviola from Ag and Markets submitted [prepared testimony](#) on the Garnet Energy Center application. This testimony is very similar to the Trelina testimony but the rebuttal to the developer's claims are more extensive.

On Page 12, line 18 of Saviola's testimony he addresses the question "Does the facility layout follow the Department's Solar Guidelines and does it align with the Department's siting policy?"

In general, access roads should follow field edges and the solar arrays should not be sited in a manner in which agricultural areas become orphaned as described in my testimony above. Additionally, the Department finds the Applications proposed siting is not consistent with the Department's siting policy because it will occur on almost 30% of active farmland classified as Prime Farmland (Generally, Mineral Soil Groups 1-4) within the proposed project. The Application update states that the project will occupy nearly 1,000 acres of land to generate up to 200 MW of electricity, however, areas located outside of fenced areas will likely become fallow or orphaned as a result of screening requirements and setbacks. This will eliminate crop production on nearly 1,000 acres of agricultural lands for a minimum of 30 years-worth of crop yields from some of the most productive farmland soils in the State. While the Applicant describes the impact to agricultural land and farming, in general, as temporary, a 30-year loss of the production of crops, livestock and livestock products constitutes a long-term conversion to a nonagricultural use and a long-term loss of food production. Although a decommissioning plan

has been prepared, there is virtually no reasonable assurance that the project will be decommissioned and that the full resumption back to agricultural use will be reestablished.

As if this is not enough the testimony goes on to respond negatively to developer's response to questions. For example, "True long-term impacts include the approximate 30 plus year loss in the production of crops, livestock and livestock products as a result of project-related components being constructed inside the fence. Nearly 1,000 acres of farmland will be taken out of production." (Page 14 line 5). On Page 15, line 18 agricultural co-utilization is discussed: "The Applicant indicates that they have not considered incorporating agricultural co-utilization as part of the Project. They indicate that there is not sufficient space for co-utilization." And goes on to say he does not agree with this response: "There is ample space inside the fence for agricultural activities such as sheep grazing, apiary incorporation and pollinator species, and small-scale grass hay production, nor have they demonstrated any reduced impacts to agriculture from the increased density of the panels. The Applicant should work with hosting farmers to explore dual-use, or agrivotalic projects. Similarly, the response to questions about subsurface drainage systems was eviscerated.

On page 19, line 18 comes this: "It is the Department's opinion that the facility will result in or contribute to a significant and adverse disproportionate agricultural impact upon the local farming community. They have not avoided, offset or minimized agricultural impacts to the maximum extent practicable using verifiable measures".

Conclusion

In my opinion, the American Farmland Trust report, the state's policies for distributed solar and the [Agricultural Technical Working Group](#) analyses will eventually be used to form the basis of a state-wide policy for responsible siting of utility-scale solar development. Therefore, the Climate Action Council should enact a moratorium on utility-scale solar projects until such time that the policies already in place for distributed solar projects are in place.

In the meantime, the Garnet Energy Center permit decision will be a litmus test to see if the State is going to protect farming communities. I believe that the testimony clearly demonstrates that the proposed project is inappropriate because "the facility will result in or contribute to a significant and adverse disproportionate agricultural impact upon the local farming community". Ag and Markets testimony for the Trelina project was similarly negative but that got approved. If the Climate Action Council does not impose a moratorium until siting restrictions are enacted or ff the Siting Board ignores the Ag and Markets testimony and the clear need to wait for guidelines, then it will be clear that the State is not going to protect farming communities.

There is another reason for a Climate Action Council imposed moratorium. The preservation of prime farmland is in the best interests of the Climate Act implementation strategies. The Climate Act has a “net-zero” target by 2050 that requires 15% sequestration. One of the strategies to meet that target is soil carbon management. Taking productive farmland out of production hinders that goal.

I submitted this comment because I believe the utility-scale solar development problems that readers of my [blog](#) raised to me are real, deserve to be entered into the record and that a moratorium until requirements are in place is the appropriate approach. I have [written extensively](#) on implementation of the Climate Act because I believe the ambitions for a zero-emissions economy outstrip available renewable technology such that it will adversely affect [reliability](#) and [affordability, risk safety, affect lifestyles](#), will have [worse impacts on the environment](#) than the purported effects of climate change in New York, and [cannot measurably affect global warming](#) when implemented. The opinions expressed in this document do not reflect the position of any of my previous employers or any other company I have been associated with, these comments are mine alone.

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