

## NEW YORK STATE CLIMATE ACTION COUNCIL

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December, 2021 Draft Scoping Plan under the  
Climate Leadership and Community Protection Act

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### **Comments of Clean Energy Advocates on Establishment of an Agrivoltaics Program for New York in the Final CLCPA Scoping Plan**

#### **I. INTRODUCTION**

Scenic Hudson, American Farmland Trust, New York League of Conservation Voters, New Yorkers for Clean Power, Hudson River Sloop Clearwater, and Sustainable Hudson Valley (Clean Energy Advocates) submit these comments concerning Strategy E4 of the Electricity Chapter of the Draft Scoping Plan (Support Clean Energy Siting and Community Acceptance) and the specific recommendation that the State should “research and incentivize the viability of agrivoltaics” (defined as “the co-location of solar powered projects and agriculture”) to “integrate solar into the agricultural communities and provide habitat improvement for threatened and endangered species.”<sup>1</sup>

Clean Energy Advocates support this recommendation, which should be retained and expanded in the Final Scoping Plan into a comprehensive program to enable and support agrivoltaics in New York. Clean Energy Advocates support agrivoltaics as a way to align renewable energy goals with agricultural preservation while increasing community acceptance of solar projects. We note that the current state of knowledge and uptake of agrivoltaics in New York is low but growing, and is being supported by the efforts of the New York Farmland Protection Working Group (FPWG) and the Agricultural Technical Working Group (ATWG), as well as research and advocacy by many others. In order to increase uptake and dissemination, the Final Scoping Plan should include a comprehensive agrivoltaics program that combines state financial and other incentives with enabling local laws, robust research, and effective outreach and education. Such a program should include the following components:

- A comprehensive definition of agrivoltaics;

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<sup>1</sup> New York State Climate Action Council Draft Scoping Plan, December 30, 2021, (“Draft Scoping Plan”) p. 162, <https://climate.ny.gov/Draft-Scoping-Plan>

- Support for agrivoltaics research and pilot projects to rapidly develop information and best practices for New York;
- An effective and well-funded outreach and education program on agrivoltaics for farmers, communities and solar developers;
- Incentives for solar projects that include agrivoltaics provided through annual NYSERDA Large Scale Renewables solicitations, the NY-Sun Program and the Build-Ready Program;
- Models and guidance for local laws that enable and promote agrivoltaics; and
- Additional legislative, regulatory and other measures to reduce barriers and enable agrivoltaics.

## **II. CLEAN ENERGY ADVOCATES SUPPORT THE SCOPING PLAN’S RECOMMENDATION TO PROMOTE AGRIVOLTAICS IN NEW YORK**

The 2019 Climate Leadership and Community Protection Act (CLCPA) requires the state to transition to 70% renewable energy supply by 2030 and 100% emissions-free energy by 2040 as part of a comprehensive plan to reduce statewide emissions levels to 60% of 1990 emissions by 2030, and 15% by 2050.<sup>2</sup> The CLCPA established the Climate Action Council (CAC) and charged it with preparation of a scoping plan, which “shall identify and make recommendations on regulatory measures and other state actions that will ensure the attainment of the statewide greenhouse gas emissions limits,” including “measures to reduce emissions from the electricity sector by displacing fossil-fuel fired electric with renewable energy or energy efficiency.”<sup>3</sup> To fully implement the CLCPA, the New York State Department of Environmental Conservation (NYSDEC) must subsequently promulgate “rules and regulations to ensure compliance with the statewide emissions reductions limits” which shall “reflect in substantial part the findings of the scoping plan.”<sup>4</sup> NYSDEC must also “work with other state agencies and authorities to promulgate [their own] regulations.”<sup>5</sup>

As described in the Draft Scoping Plan, meeting renewable energy targets will require rapid deployment of existing renewable energy technologies such as wind, solar, and energy

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<sup>2</sup> CLCPA; NY ECL § 75-107.

<sup>3</sup> NY ECL § 75-0103.

<sup>4</sup> NY ECL § 75-0109.

<sup>5</sup> *Id.*

storage.<sup>6</sup> The CAC recognizes that this buildout hinges on successful project siting and community acceptance, and that “New York needs a multi-pronged approach with communities to support the siting and acceptance of renewable energy facilities.” This includes “promotion of the benefits that renewable energy projects will provide, while working with communities to maximize these local benefits and minimize impact on lands identified by communities with other competing uses such as farming and agricultural soils” through strategies to support well-sited and streamlined clean energy development, along with public education and outreach.<sup>7</sup>

The potential impact on agricultural soils and farmland of the significant amount of large scale and distributed solar energy development necessary to meet CLCPA targets has been raised in many potential host communities and by farmers and others across the state. A recent stakeholder survey conducted by American Farmland Trust (AFT) revealed “concern that solar projects could take tens of thousands of acres out of production and negatively impact local farming communities.”<sup>8</sup> “In response to the acceleration of solar development in New York State,” AFT states, “local communities, farmers, and other stakeholders are raising important questions about how to accommodate this new land use in ways that maximize positive benefits and minimize negative impacts on farmland, the farm economy, food security, and rural livelihoods.”<sup>9</sup>

Recognizing this concern, the Draft Scoping Plan includes a recommendation that the State should “research and incentivize the viability of agrivoltaics” (defined as “the co-location of solar powered projects and agriculture”) to “integrate solar into the agricultural communities and provide habitat improvement for threatened and endangered species.” Clean Energy Advocates support this recommendation and urge the CAC to retain and broaden it into a comprehensive, statewide agrivoltaics program in the Final Scoping Plan, as described below.

Solar energy facilities as a land use can and must be positioned to serve existing community goals such as economic growth, diversification of the tax base, job creation,

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<sup>6</sup> See Draft Scoping Plan, Chapter 13.

<sup>7</sup> Draft Scoping Plan, pp. 162-163.

<sup>8</sup> Smart Solar Siting on Farmland: Achieving Climate Goals While Strengthening the Future for Farming in New York; American Farmland Trust, 2/8/22 (AFT), p. 5: <https://farmland.org/smart-solar-siting-in-new-york/>

<sup>9</sup> *Id.* p. 9.

localization of energy generation, and farmland preservation.<sup>10</sup> With regard to the latter, projects that strategically combine agricultural and solar energy production can play a critical role, but the key is to establish an effective program that identifies opportunity areas, puts farmers and solar developers together and provides them with sufficient information and guidance, and provides the market incentives and regulatory framework needed to achieve this vision.

### **III. AGRIVOLTAICS CAN HELP MEET SUSTAINABLE FOOD AND ENERGY PRODUCTION GOALS WHILE INCREASING COMMUNITY ACCEPTANCE OF SOLAR FACILITIES**

Agrivoltaics can “contribute to achieving sustainable energy and food goals simultaneously, while possibly reducing local opposition to PV deployment.”<sup>11</sup> The strategic combination of agricultural and solar energy production can have many benefits, including:

- Increased global land productivity;<sup>12</sup>
- Improved crop yield and resilience;<sup>13</sup>
- Reduced environmental impacts;<sup>14</sup>
- Rural economic opportunities;<sup>15</sup>
- Protection against drought and heat stress;<sup>16</sup>
- Soil regeneration;<sup>17</sup>
- Increased crop production, among other benefits, in drylands;<sup>18</sup>
- Improvements for pasture-based agricultural processes;<sup>19</sup>

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<sup>10</sup> See *Examining existing policy to inform a comprehensive legal framework for agrivoltaics in the U.S.*, Alexis S. Pascaris, *Energy Policy*, Sept. 29, 2021 (“Pascaris”).

<sup>11</sup> How “Agrivoltaics” Can Provide More Benefits Than Agriculture and Solar Photovoltaics Separately, Energy Innovation, November 1, 2021, (“Energy Innovation”): <https://energyinnovation.org/2021/11/01/how-agrivoltaics-can-provide-more-benefits-than-agriculture-and-solar-photovoltaics-separately/#:~:text=The%20model%2Dbased%20results%20showed,processing%20of%20agricultural%20products.%E2%80%9D%20The>

<sup>12</sup> Pascaris p.1.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* p. 2.

<sup>17</sup> Transforming solar sites from liabilities to assets, Solar Power World Online, Billy Ludt, May 12, 2022, (Ludt): <https://www.solarpowerworldonline.com/2022/05/transforming-solar-sites-from-liabilities-to-assets/>

<sup>18</sup> Energy Innovation.

<sup>19</sup> *Id.*

- Restoration of pollinator habitat;<sup>20 21</sup> and
- Increased local acceptance and support of solar projects.<sup>22 23</sup>

In addition, “at the individual farm level, solar leases can provide a vital secondary source of income to farmers that own their land to help their farm operations remain viable and keep farmland within families to transfer to the next generation.”<sup>24</sup> Recognizing these numerous potential benefits, there is interest in agrivoltaics on the part of farmers in New York. The results of AFT’s survey further indicate:

Some farmers are also expressing interest in dual-use solar where agricultural activities and solar energy production are maintained simultaneously on the same piece of land. Agrivoltaic projects, a kind of dual use solar, are specifically designed to support a viable farm operation and may include features that require additional investment, such as elevated panels and wider spacing to allow for crop or forage production or for livestock grazing within the facility area. Robust dual use solar applications may offer a potential path forward to expand solar production without negatively impacting farm and agricultural viability by allowing agricultural production to continue. However, further applied research will be needed to determine feasibility and best management practices.<sup>25</sup>

Loss of agricultural soils and productivity is often cited by residents and others in opposition to proposed solar energy facilities. Therefore, it is critical to find ways that continued (or renewed) agricultural production can be combined with solar in the interest of mitigating impacts, supporting agriculture, and fostering community acceptance. A comprehensive agrivoltaics program for New York can achieve these goals.

#### **IV. THE STATE OF AGRIVOLTAICS KNOWLEDGE AND UPTAKE IN NEW YORK IS LOW BUT GROWING**

According to the US Department of Agriculture:

While a lot of research is underway, many questions about agrivoltaic systems persist. Various research and demonstration sites around the country are working to find answers to questions like: What are the long-term impacts of solar energy

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<sup>20</sup> Butterflies, bees, sheep, and solar energy production can coexist, Ryan Kennedy, June 6, 2022, <https://pv-magazine-usa.com/2022/06/06/butterflies-bees-sheep-and-solar-energy-production-can-coexist/#:~:text=EDF%20Renewables%20maintains%20a%2023.4,%2C%20butterflies%2C%20and%20sheep%20grazing.>

<sup>21</sup> Energy Innovation.

<sup>22</sup> Pascaris, p. 2.

<sup>23</sup> Energy Innovation.

<sup>24</sup> AFT, p. 5. Solar development can negatively impact viability for farmer-renters, however. *Id.* p. 16.

<sup>25</sup> *Id.* p. 5.

infrastructure on soil quality? What crops, in what regions, are best suited for photovoltaic systems? How can both crop and energy systems be optimized? How will livestock (and wildlife) interact with solar energy equipment? What types of business agreements will work best between a solar developer or company and agricultural producer or landowner?”<sup>26</sup>

And despite growing interest, research, examples, and support, this is still the case in New York. According to AFT:

The potential of agrivoltaics to minimize conflict between food and energy production is promising but conditional on continued research, field testing and, ultimately, proof of concept. A Cornell study completed in 2021, for example, determined that grazing sheep on utility scale solar sites can be a cost-effective method to control onsite vegetation and provides financial benefits to sheep farmers interested in accessing such facilities. As this was limited to grazing, further studies now need to be undertaken for different crop and livestock operations in different climates. As more agrivoltaic installations are developed, more research will be needed to evaluate performance, identify the types of crops that can grow profitably in different climates, and assess the impact that these projects have on soil health and growing conditions.<sup>27</sup>

The level of uptake of combined solar and agriculture systems in New York varies depending on the type. There are many examples of proposed and constructed solar facilities that are labeled “pollinator-friendly” - “solar sites planted with deep-rooted native flowers and grasses that capture and filter storm water, build topsoil, and provide abundant and healthy food for bees and other insects that provide critical services to our food and agricultural systems”<sup>28</sup> - in New York. For example, Eden Renewables is developing a 60 MW portfolio of pollinator friendly solar projects.<sup>29</sup>

Solar facilities that combine energy generation with strategic plantings and other measures to provide important habitat serve to help mitigate both the climate and the biodiversity crises.<sup>30</sup> Solar energy facilities may also be the site of apiaries. And while it is not technically

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<sup>26</sup> Agrivoltaics: Coming Soon to a Farm Near You? USDA (USDA):

<https://www.climatehubs.usda.gov/hubs/northeast/topic/agrivoltaics-coming-soon-farm-near-you>

<sup>27</sup> AFT, p. 22.

<sup>28</sup> The Center for Pollinators in Energy: <https://fresh-energy.org/beeslovesolar>

<sup>29</sup> Eden Renewables building 60 MW of bee-friendly solar farms in New York, Feb. 1, 2022, <https://renewablesnow.com/news/eden-renewables-building-60-mw-of-bee-friendly-solar-farms-in-new-york-771496/>

<sup>30</sup> The weekend read: the dawn of deep green solar, PV Magazine, June 11, 2022: <https://www.pv-magazine.com/2022/06/11/the-weekend-read-the-dawn-of-deep-green-solar/>

“agrivoltaics,” pollinator-friendly solar can help increase production on nearby agricultural lands that depend on pollinators.<sup>31</sup>

As noted by AFT, solar grazing has been studied in New York by Cornell University. There are also now several New York facilities that include sheep grazing, often supported by the work of groups like the American Solar Grazing Association<sup>32</sup> and Agrivoltaic Solutions<sup>33</sup> to match solar projects with sheep farmers. The approved 177 MW Morris Ridge Solar project, proposed by EDF Renewables North America, included a feasibility study and integration plan for grazing and apiary co-location.<sup>34</sup> And combining solar grazing with regenerative land management practices can provide additional significant environmental and economic benefits.<sup>35</sup>

We are not aware of any major existing integrated crop agrivoltaics facilities in New York. This indicates a need to conduct research to identify barriers and determine how best to enable this practice. Internationally, there are many examples of agrivoltaics research and practice, and the agrivoltaics knowledge base is growing both abroad and in the U.S. The Agrisolar Clearinghouse is an online source of agrivoltaics information provided in the interest of “connecting businesses, land managers, and researchers with trusted resources to support the growth of co-located solar and sustainable agriculture.”<sup>36</sup> It provides information in the areas of agrisolar system design, planning and analysis; aquavoltaics; farm energy efficiency; financial resources; policy; social science research; solar apiaries; solar dairy; solar farming; solar grazing; solar greenhouses; solar harvest equipment; solar irrigation; and solar pollinator habitat.<sup>37</sup>

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<sup>31</sup> State Pollinator-Friendly Solar Initiatives, Georgena Terry, Clean Energy States Alliance, January 2020: <https://www.cesa.org/wp-content/uploads/State-Pollinator-Friendly-Solar-Initiatives.pdf>

<sup>32</sup> <https://solargrazing.org/>

<sup>33</sup> <https://agrivoltaicsolutions.com/>

<sup>34</sup> See Application of Morris Ridge Solar Energy Center, LLC for a 94-c Permit for Major Renewable Energy Facility: <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=21-00025&CaseSearch=Search>; see also <https://www.edf-re.com/project/morris-ridge-solar-project/>

<sup>35</sup> Ludt.

<sup>36</sup> <https://www.agrisolarclearinghouse.org/>

<sup>37</sup> <https://www.agrisolarclearinghouse.org/agrisolar-information/>

In New York, the Agricultural Technical Working Group (ATWG)<sup>38</sup> and the Farmland Protection Working Group (FPWG)<sup>39</sup> are charged with aligning renewable energy and agricultural policy and have focused on the potential for increasing uptake of agrivoltaics. The ATWG, which was convened by the New York State Energy Research and Development Authority (NYSERDA) to help address “concerns relating to solar development and potential conflicts with agricultural lands and their operations,” has developed an enhanced Smart Solar Siting Scorecard for solar facilities that includes measures to incentivize agrivoltaics and can be applied in the future.

In May, the FPWG released an Interim Report, setting forth a set of prioritized preliminary strategies for further exploration and refinement, including:

- Facilitate further research related to dual-use or co-utilization of agricultural production and utility-scale renewable energy projects;
- Incentivize developers and landowners to continue to utilize land for farming within the project site, co-existing with solar projects; and
- Updating NYSERDA’s model solar energy law to enhance treatment of agricultural issues.<sup>40</sup>

The FPWG also notes that “NYSERDA is currently developing an agrivoltaics incubator request for proposals, planned to be released in the second quarter of 2022. The RFP will seek proposals from organizations, research institutions, and individuals with an interest in advancing

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<sup>38</sup> The A-TWG serves as an advisory body to the State of New York and other participating entities, providing advice and guidance to help steer efforts to advance renewable (primarily solar) energy development across scales in a responsible way while appropriately balancing the needs and contributions of New York State’s agricultural operations, lands, and farmers. It is comprised of agricultural land and farmer advocates, solar developers and operators, non-governmental organizations that focus on clean energy, climate, and environmental protection, local government officials, academic experts, and state agencies. <https://www.nyatwg.com/>

<sup>39</sup> The New York State Farmland Protection Working Group (FPWG) was created as a result of Chapter 55 of the Laws of 2021. The FPWG is a coordinated effort among the New York State Departments of Agriculture and Markets and Environmental Conservation, the New York State Energy Research and Development Authority, the New York State Office of Renewable Energy Siting, and the New York State Department of Public Service. These key state agencies are convening with appointed representatives from County Agriculture and Farmland Protection Boards, as well as local government officials from across New York. The goal of the FPWG is to consider and recommend strategies to the State on the siting process of major renewable energy facilities and to minimize the impact of siting on productive agricultural soils on working farms. <https://agriculture.ny.gov/land-and-water/farmland-protection-working-group>

<sup>40</sup> See May 25, 2022 Press Release: New York State Releases Interim Report From Farmland Protection Working Group, <https://agriculture.ny.gov/news/new-york-state-releases-interim-report-farmland-protection-working-group> (Link to interim FPWG report in press release).



ideas and opportunities that support a broader understanding of the costs, opportunities, and market potential for agrivoltaics in New York State.”<sup>41</sup>

**V. THE FINAL SCOPING PLAN SHOULD INCLUDE A COMPREHENSIVE PROGRAM TO ENABLE AGRIVOLTAICS THAT COMBINES RESEARCH AND EDUCATION WITH FINANCIAL INCENTIVES AND FAVORABLE REGULATION**

Recent research concludes that the best way to promote and enable agrivoltaics is through a legal framework that combines federal and state energy financing mechanisms with favorable state and local land use policies.<sup>42</sup> Such a legal framework should be coupled with increased information and best practices for agrivoltaics developed through focused research and pilot projects, and a robust outreach and education program to grow knowledge and uptake of agrivoltaics in New York.

While agrivoltaics is encouraged in New York policy, there are currently no concrete incentives or mandatory requirements for developers to include agrivoltaics as part of project design. In order to remove barriers and enable its uptake in the interest of meeting renewable energy targets, the Final Scoping Plan should include a comprehensive agrivoltaics program with the following components.

**A. The State Should Develop a Definition of Agrivoltaics that Recognizes and Incorporates its Different Forms and Ensures its Agricultural Benefits**

In its recommendation, the Scoping Plan defines agrivoltaics as “the co-location of solar powered projects and agriculture.” In order to enable agrivoltaics, the state should develop a definition of agrivoltaics that recognizes its different forms (and what is and what is not technically “agrivoltaics”) and ensures that the benefits of combining solar and agriculture are maximized.

As noted above, there are many ways that solar and agricultural systems can be strategically combined: to support pollinators and biodiversity at solar sites; to provide sites for apiaries, grazing, and/or crops so that both agricultural and energy production occur; or to provide financial benefits via lease payments to farmer-owners by siting solar on certain lands while remaining lands can continue to be farmed. According to the USDA, “agrivoltaics is the

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<sup>41</sup> *Id.*

<sup>42</sup> Pascaris.

use of land for both agriculture and solar photovoltaic energy generation. It's also sometimes referred to as agrisolar, dual use solar, [or] low impact solar. Solar grazing is a variation where livestock graze in and around solar panels. This system looks at agriculture and solar energy production as [complements] to the other instead of as competitors.”<sup>43</sup>

Ensuring continued agricultural production along with solar energy generation is central to the concept of “agrivoltaics.” France has recently adopted a decision-tree to classify agrivoltaic installations, defined as PV systems whose modules are located on the same surface of an agricultural production without causing a significant degradation of agricultural yield or revenue.<sup>44</sup>

AFT defines agrivoltaics, or “agricultural dual-use solar,” as “a solar installation that integrates solar arrays and farming activity on the same land” and also specifies that such installations should “maintain, rather than displace, farming activity by making agricultural production an integral part of the project design and operation.”<sup>45</sup> AFT makes a distinction between agrivoltaics and co-location as follows:

Agrivoltaic projects are designed with a farmer to support the farm and prioritize forage and/or crop production. Co-location projects may include pollinator-friendly plants or sheep for vegetation management, but these activities are secondary to power production and incidental to project design and operations.<sup>46</sup>

Defining what is and is not technically “agrivoltaics” while recognizing that agricultural and solar energy generation can be strategically combined in many ways is a critical first step to building a framework of incentives and regulation that will help to achieve renewable energy goals and support New York’s farmers and agricultural economy at the same time. Such a definition should reflect the differing levels of agricultural benefits that come from strategically combining solar energy and agricultural production. Such a definition should build in flexibility in a way that encourages developers to pursue combining solar and agricultural production, thus increasing uptake in New York.

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<sup>43</sup> USDA.

<sup>44</sup> France defines standards for agrivoltaics, PV Magazine, Emiliano Bellini, April 28, 2022: <https://www.pv-magazine.com/2022/04/28/france-defines-standards-for-agrivoltaics/>

<sup>45</sup> AFT, p.22.

<sup>46</sup> *Id.*

## **B. The State Should Enable and Fund Research and Pilot Projects to Rapidly Develop Best Practices and Guidance for Agrivoltaics in New York**

As described above, there is a range of uptake levels of different kinds of combined solar and agricultural systems. And as noted by AFT, more research on agrivoltaics and its potential for dissemination in New York is needed. To assess and gain the potential benefits of combining agriculture and solar in New York as quickly as possible in the interest of meeting renewable energy targets, New York must enable and fund research and pilot projects to rapidly identify and develop guidance and best practices.<sup>47</sup> The forthcoming NYSERDA agrivoltaics incubator RFP will be critical in this regard.

As recommended by AFT, such research and knowledge building should include:

- Partnering with academic institutions and developers to collect and aggregate data from all projects currently coupling any agricultural activities with solar energy generation;
- Investing in applied agrivoltaic research;
- Growing the body of knowledge on agrivoltaics; and
- Evaluating market viability of products produced on solar projects.<sup>48</sup>

This is echoed by the FPWG, which identified a priority strategy to “facilitate further research related to dual-use or co-utilization of agricultural production and utility-scale renewable energy projects [(20 MW AC and larger)]” through the following:

- Document case studies of agricultural activities within solar energy facilities (e.g., dual-use co-utilization) from other states and countries;
- Foster the development of standards and best management practices for agricultural dual-use/co-utilization (forage, row crops, pasture, etc.); and
- Direct funding to applied research located on/adjacent to utility-scale and distribution-level demonstration projects incorporating dual-use/co-utilization. Select/encourage a pilot project or projects to minimize agricultural impacts.<sup>49</sup>

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<sup>47</sup> See, e.g., Senate Bill S8088, to establish a dual-use solar energy projects pilot program. <https://www.nysenate.gov/legislation/bills/2021/S8088>

<sup>48</sup> AFT, pp. 30, 32, 33.

<sup>49</sup> FPWG Interim Report p. 24.

The state should also develop a New York-specific pollinator friendly solar scorecard. Although New York passed the Pollinator Friendly Solar Act which directs the Commissioner of Agriculture and Markets to develop guidelines for vegetation management plans to be used by persons or corporations that make claims that they provide pollinator protection, it does not appear that a solar specific scorecard has been developed.<sup>50</sup>

**C. The State Should Establish an Education and Outreach Program that Informs Farmers, Communities and Developers of Agrivoltaics Benefits and Best Practices**

As described herein, strategically combining solar and agriculture has many potential benefits, and both farmers and developers have shown interest. And as recognized by the CAC, education and outreach is key to achieving smart renewables siting and community acceptance. Therefore, the state should establish an agrivoltaics education and outreach program to inform farmers, communities and developers of benefits and best practices, both to the extent they are already known, and as more information is developed. Such a program should be well funded, specifically designed to facilitate the uptake of combined solar and agriculture systems, and include a clearinghouse to match developers with farmers interested in hosting solar facilities or conducting agrivoltaic farming.<sup>51</sup>

**D. The State Should Incentivize Agrivoltaics through Annual NYSERDA Large Scale Renewables Solicitations, the NY-Sun Program and the Build-Ready Program**

New York has three existing programs to build the solar market that can and should incorporate incentives for solar facilities that include agrivoltaics (including pilots and research projects): NYSERDA annual Large Scale Renewables (LSR) solicitations; the NY-Sun Program; and the Build-Ready Program.

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<sup>50</sup> Pollinator Friendly Solar Act: <https://www.nysenate.gov/legislation/bills/2017/S6339>. The state has developed Utility Corridor Pollinator Habitat Guidelines: [https://agriculture.ny.gov/system/files/documents/2020/06/pollinatorhabitatguidelines\\_0.pdf](https://agriculture.ny.gov/system/files/documents/2020/06/pollinatorhabitatguidelines_0.pdf)

<sup>51</sup> See, e.g., Senate Bill S7861, which directs the Department of Agriculture and Markets and NYSERDA to develop and produce educational materials on the use of agrivoltaics in farming for farmers. <https://www.nysenate.gov/legislation/bills/2021/S7861> Such a program should be expanded to include not just farmers but developers, host communities and other stakeholders.

**a. NYSERDA LSR Solicitations Should Incentivize Utility Scale Solar Projects that Include Agrivoltaics**

The 2021 NYSERDA LSR solicitation (contract awards were recently announced for 22 solar projects, including six with energy storage, to develop 2,408 megawatts of new, renewable energy capacity throughout New York State) required proposers to complete the Smart Solar Siting Scorecard but it was used only for information, not in the scoring or evaluation process.<sup>52</sup> According to the FPWG Interim Report, use of the Smart Solar Siting Scorecard along with the Agricultural Mitigation Payment Policy resulted in a “meaningful shift away” from renewable energy systems sited on important agricultural soils.<sup>53</sup> There is no information on whether its use incentivized the inclusion of agrivoltaics in the awarded projects.

As identified by the FPWG, an important strategy is to “incentivize developers and landowners to continue to utilize land for farming within the project site, co-existing with solar projects.” To that end, the 2022 LSR solicitation (and future solicitations) should use a revised Smart Solar Siting Scorecard in a manner that incentivizes the inclusion of agrivoltaics, co-location, pollinator-friendly vegetation, and/or demonstrates that a project is providing financial income to a farmer to help continue farming. The inclusion of agrivoltaics or other agriculturally beneficial practices and land management within or along with the proposed solar facility may then be used to reduce the required agricultural mitigation payment by an appropriate amount depending on the level of benefit provided. NYSERDA should also consider whether to use the Smart Solar Siting Scorecard in the project scoring and evaluation process. In this way, the LSR solicitation process should move from merely avoiding agricultural impacts (which may become harder to do as feasible sites become more scarce) and toward a program that achieves both renewable energy and agricultural production goals simultaneously.

**b. The NY-Sun Program Should Incentivize Distributed Solar Projects that Include Agrivoltaics and Support Farm Viability**

The NY-Sun Program that incentivizes distributed solar projects should also incorporate measures to help align renewable energy and agricultural policy. As noted by the FPWG, NY-

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<sup>52</sup> Request for Proposals RESRFP21-1, Smart Solar Siting Scorecard, *available at*: <https://www.nyatwg.com/resources> (“Despite its name, NYSERDA will not consider information contained within completed Scorecards in the RFP scoring or evaluation process. Instead, NYSERDA will use the Scorecard information to better understand the underlying siting conditions for solar Bid Facilities....”)

<sup>53</sup> FPWG Interim Report p.16.

Sun projects must comply with construction guidelines and are also subject to a mitigation payment in the event they impact over 30 acres of important agricultural soils.<sup>54</sup> Likely due to their smaller size, such projects lend themselves to a situation where remaining farmland not developed with solar arrays remains in agricultural production, which was the case for the overwhelming majority of NY-Sun projects in 2021.<sup>55</sup> Again, however, there is no information on whether agrivoltaics or co-location was included in any of these projects.

The recently adopted order to expand the NY-Sun program to 10 GW acknowledged comments calling for an agrivoltaics “adder,” but stated that the record is incomplete and directed [Department of Public Service (DPS)] staff to “evaluate the potential for such an adder (whether on a stand-alone basis, or as an expansion of an existing adder focused on beneficial siting) and submit a proposal for Commission consideration if such an adder is deemed necessary and reasonable.”<sup>56</sup> We encourage DPS staff to take up this directive and consider how best to incentivize agrivoltaics in the NY-Sun program in the future.

Such analysis should explore and compare the effectiveness of incentivizing agrivoltaics through both an upfront “adder” and the Value of Distributed Resources (VDER) structure. Any such incentive program should be developed with stakeholder input and be in alignment with the level of mitigation and agricultural benefit provided, e.g., it should provide commensurate incentive and value for projects that incorporate true agrivoltaics versus co-location versus “pollinator-friendly” practices. Also, it must “appeal to developers both in terms of financial gains and in terms of regulatory simplicity” and should be designed to allow for flexibility in solar system design that upholds agricultural productivity yet does not compromise the generating capacity of the solar array.<sup>57</sup>

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<sup>54</sup> FPWG Interim Report p. 16.

<sup>55</sup> Id.

<sup>56</sup> Case 19-E-0735, Petition of New York State Energy Research and Development Authority Requesting Additional NY-Sun Program Funding and Extension of Program Through 2025, Order Expanding NY Sun Program, April 14, 2022, p. 49, *available at*:

<https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=19-E-0735>

<sup>57</sup> Pascaris, p. 6.

**c. The Build-Ready Program Should Solicit Recommendations for Solar Sites with Optimized Potential for Agrivoltaics and Support for Farm Viability**

The Clean Energy Resources Development and Incentives Program, or “Build-Ready” Program established by the 2020 Accelerated Renewable Energy and Community Benefit Act, authorizes NYSERDA to identify and secure permits for sites suitable for renewable energy development, with a priority given to previously developed sites.<sup>58</sup> As recognized by the FPWG, the primary purpose of the Build-Ready Program is the development of renewable energy on previously disturbed and existing or abandoned commercial and industrial sites, but “when requested, the Build-Ready Program can investigate opportunities to promote agrivoltaics.”<sup>59</sup> NYSERDA should explore how to encourage and incentivize such requests in the Build-Ready Program to the extent that such previously developed sites provide the opportunity for agrivoltaics.<sup>60</sup>

**E. The State Should Promote Local Planning and Zoning that Enables Agrivoltaics and Combined Solar and Agricultural Production**

Recent analysis identifies local land use policy as “the most significant catalyst or inhibitor for agrivoltaic development” in the U.S.:

- “Despite their agricultural function, agrivoltaics systems are subject to the permitting and regulatory process of a conventional solar PV installation, with the added condition of placement on agricultural land;”
- “The presence of strict land use policy related to solar energy siting on farmland is a critical barrier for agrivoltaics;” and
- “Local zoning laws that prohibit or limit placement of solar facilities on agricultural soils in the interest of protection can act as a barrier to agrivoltaics development;” but
- “[Z]oning ordinances that are permissive of solar infrastructure on farmland are key approaches to establish a favorable regulatory environment for agrivoltaics at the local level.”<sup>61</sup>

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<sup>58</sup> See Pub. Auth. Law Title 9-B, §§ 1900-1905; NYSERDA Build Ready Program: <https://www.nyserda.ny.gov/All-Programs/Build-Ready-Program>

<sup>59</sup> FPWG Interim Report, p. 17.

<sup>60</sup> Compare Assembly Bill A7696, which prohibits development of build-ready sites on “viable agricultural land.” [https://www.nysenate.gov/legislation/bills/2021/A7696#:~:text=A7696%20\(ACTIVE\)%20%2D%20Summary,sites%20on%20viable%20agricultural%20land.](https://www.nysenate.gov/legislation/bills/2021/A7696#:~:text=A7696%20(ACTIVE)%20%2D%20Summary,sites%20on%20viable%20agricultural%20land.)

<sup>61</sup> Pascaris, p. 7.

In New York, smaller solar projects are subject to local environmental and land use review, while major renewable energy projects must also be constructed and operated “in accordance with the substantive provisions of all local laws ... except for those provisions of local laws that the office determines to be unreasonably burdensome.”<sup>62</sup> Therefore, local planning and zoning can play a critical role in enabling agrivoltaics for all sizes of solar projects. For example, a local zoning law that separately defines and permits agrivoltaics as an as-of-right use that is widely permitted in all agricultural zoning districts (and other zoning districts where agriculture is permitted) can help to incentivize both distributed and large scale solar that incorporates agrivoltaics. However, local zoning that prohibits or significantly limits solar on agricultural soils, while adopted in the interest of protecting agriculture, may actually act as a barrier to agrivoltaics in those areas. To help enable agrivoltaics, local law provisions like setbacks and height restrictions can be designed to allow for flexibility so that both agricultural and energy production are maximized.

The latest version of NYSERDA’s Model Solar law suggests promoting agrivoltaics through incentive zoning but does not otherwise provide specific recommendations or include model language or other provisions for local laws that incentivize agrivoltaics.<sup>63</sup> As recognized by the FPWG, updating the Model Solar Law to enhance treatment of agricultural issues – which should include development of enabling language for agrivoltaics as we suggest – is a priority. This should be combined with workshops and technical assistance to promote the incorporation of such provisions into local zoning laws, as suggested by the FPWG and the Scoping Plan.<sup>64</sup>

#### **F. The Final Scoping Plan Should Recommend Additional Enabling Legislative and Regulatory Actions as Part of a Comprehensive Agrivoltaics Program for New York**

The State should also explore additional ways to address other potential barriers and opportunities for agrivoltaics and combined solar/agricultural production as part of a comprehensive statewide program. These include the following:

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<sup>62</sup> 19 NYCRR § 900-6.3(a); see also § 900-2.25(c): “Pursuant to Executive Law § 94-c, [ORES] may elect not to apply, in whole or in part, any local law or ordinance which would otherwise be applicable if it makes a finding that, as applied to the proposed facility, it is unreasonably burdensome in view of the CLCPA targets and the environmental benefits of the proposed facility.”

<sup>63</sup> NYSERDA Model Solar Law, available at: <https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Siting/Solar-Guidebook>

<sup>64</sup> FPWG Interim Report p. 26; Draft Scoping Plan pp. 162-163, 305.



- Establish a Build-Ready Program for Agrivoltaics and Co-Located Agriculture and Solar: As described above, the existing Build-Ready Program focuses on previously developed and existing or abandoned commercial and industrial sites, and may not overlap with sites that provide significant opportunity to agrivoltaics or co-location. The State should consider establishment of a Build-Ready Program that specifically identifies such sites.
- Align ORES regulations with LSR incentives: The relatively new Executive Law § 94-c process and office of Renewable Energy Siting (ORES) regulations for major renewable energy facilities provide only that if a project includes agrivoltaics or agricultural co-utilization, it must provide a plan that demonstrates feasibility in its permit application.<sup>65</sup> There is no statutory or regulatory requirement to include agrivoltaics in a new major renewable energy project. While this currently provides for flexibility for developers, the State should consider how to align this regulation with future LSR solicitations that incentivize agrivoltaics and/or co-location through use of the revised Smart Solar Siting Scorecard or otherwise.
- Define agrivoltaics as “farm operations”: Explore the potential for expansion of the definition of “farm operation” to include agrivoltaics even where the solar energy facility generates more than 110% of farm electricity, to give agrivoltaics protection from restrictive local zoning and planning laws under Agriculture and Markets Law (AML) § 305-a. This can be made subject to certain criteria, i.e., a demonstration of economic feasibility in an approved agrivoltaics plan.
- Ensure tax provisions enable agrivoltaics: The State should ensure that tax provisions avoid unintentional barriers to agrivoltaics development, e.g., eliminate or revise the tax penalty for converting farmland to solar under certain conditions.<sup>66</sup> The FPWG also recognizes allowing continued agricultural assessment on acres utilized for farming within a solar project site as a potential financial incentive for agrivoltaics, or dual-use, multi-use and co-utilization.<sup>67</sup>

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<sup>65</sup> 19 NYCRR § 900-2.16(e).

<sup>66</sup> See, e.g., New York Senate Bill S545, which would bring solar in line with oil, gas, and wind development as exempt from agricultural conversion penalties: <https://www.nysenate.gov/legislation/bills/2021/S545>

<sup>67</sup> FPWG Interim Report p. 25.

- Enable agrivoltaics for distributed solar projects through SEQRA: The State should explore amending the State Environmental Quality Review Act (SEQRA) regulations to add agrivoltaics as a Type II action exempt from environmental review, subject to certain criteria. This can be modeled on the way that the State recently exempted certain solar projects on previously disturbed sites and existing structures from SEQRA review.<sup>68</sup>

## VI. CONCLUSION

Meeting the CLCPA’s renewable energy targets is critical to achieving statewide greenhouse gas emissions reductions and helping to mitigate the worst impacts of climate change. With new restrictions on federal pathways to reduce emissions, action by states is more critical than ever. The new and significant amount of rapid solar energy development required to meet CLCPA targets can and must be done a way that also benefits farmers and their communities, and New York’s agricultural economy as a whole. The strategic combination of solar and agricultural systems can help achieve this vision. To enable it, the Final Scoping Plan should include a comprehensive agrivoltaics program for New York that combines strong market incentives, permissive local regulation, robust research, and effective outreach and education as described above.

Respectfully submitted on July 1, 2022.

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<sup>68</sup> See 6 NYCRR §§ 617.5(c)(14), (15).