



Town of Wappinger, Planning Board

February 3, 2023

20 Middlebush Road

Wappinger Falls, NY 12590

RE: Old Myers NY LLC Site Plan and Special Use Permit Application

Dear Chairman Flower and Members of the Planning Board,
Lightstar Renewables (Lightstar), on behalf of applicant Old Myers NY, LLC, is pleased to present our complete Site Plan and Special Use Permit Application package to the Town of Wappinger Planning Board.

Having worked with the Town Board for roughly a year to rezone the property from R40 to R80, and ultimately to bring Agrivoltaics to the Town of Wappinger, we're excited to now be working with the Planning Board to make this project a reality. With Agrivoltaics being new to the Town of Wappinger, we would like to present explanation behind the development of our farm plan and insight into the logistics of working with our farm partners, the Thompson family and Solar Agricultural Services (SolAg). The Thompsons will serve as both landlords and farmers, to ensure that this community solar project preserves the farming heritage of the land. We believe that maximizing the potential of the parcel at 189 Myers Corners Rd will not only help meet clean energy goals but foster a more resilient community and work to fulfill the goals of the Town of Wappinger.

LIGHTSTAR RENEWABLES

Lightstar was established in 2019 as a community solar developer committed to responsible solar development and land stewardship. Lightstar develops, builds and operates community solar projects that benefit not only the landowner, but the land and the community. We care for and steward the land before, during and after the system is built while maintaining long-term partnerships with landowners and communities. To date the company has a 700+MW pipeline of both standard and agrivoltaic systems across 10 states. LSR's team are seasoned veterans of the solar industry with over 1000MW of total development experience over the last 15 years. Lightstar has successfully engaged towns and counties in New York, Maryland, New Jersey, and Illinois to allow for agrivoltaic projects to be sited. Lightstar has a permitting pipeline of

125MW+ of agrivoltaic systems across five states and anticipates developing AgPV systems in every market it enters.

AGRIVOLTAICS BACKGROUND

‘Agrivoltaics’ (AgPV) or ‘Dual Use’ projects are at the forefront of responsible, sustainable land use. Research and development has been conducted in the US and around the world which supports the notion that dual use projects not only work, but can provide additional benefits than conventional farming or solar production separately.

Research has shown that solar panels can reduce water usage up to 50% on an irrigated site¹, provide benefits to particular crop varieties², and provide vital economic stability to family farmers, therefore securing farmland for the next generation. Additionally, shading provides relief from intense summer heat, and prevents evaporation, making plants more resistant to extreme temperatures and increasingly common summer droughts³. As for solar benefits, vegetation under the panels improves efficiency of panels by cooling them through evapotranspiration.⁴ Lightstar and our agrivoltaic partners aim to follow the best practices put forward by The Fraunhofer ISE in Germany⁵ and The National Renewable Energy Laboratory’s “5 C’s of Agrivoltaic Success in the United States.”⁶

¹ Hassanpour Adeg E, Selker JS, Higgins CW (2018) Remarkable agrivoltaic influence on soil moisture, micrometeorology and water-use efficiency. PLoS ONE 13(11): e0203256.

<https://doi.org/10.1371/journal.pone.0203256>

² Laub, M., Pataczek, L., Feuerbacher, A. et al. Contrasting yield responses at varying levels of shade suggest different suitability of crops for dual land-use systems: a meta-analysis. Agron. Sustain. Dev. 42, 51 (2022). <https://doi.org/10.1007/s13593-022-00783-7>; Chae, S.-H.; Kim, H.J.; Moon, H.-W.; Kim, Y.H.; Ku, K.-M. Agrivoltaic Systems Enhance Farmers’ Profits through Broccoli Visual Quality and Electricity Production without Dramatic Changes in Yield, Antioxidant Capacity, and Glucosinolates. Agronomy 2022, 12, 1415. <https://doi.org/10.3390/agronomy12061415>

³ AL-agele, H.A.; Proctor, K.; Murthy, G.; Higgins, C. A Case Study of Tomato (*Solanum lycopersicon* var. Legend) Production and Water Productivity in Agrivoltaic Systems. Sustainability 2021, 13, 2850. <https://doi.org/10.3390/su13052850>

⁴ https://www.researchgate.net/publication/308945643_Experimental_Analysis_of_Effect_of_Vegetation_under_PV_Solar_Panel_on_Performance_of_Polycrystalline_Solar_Panel

⁵ Fraunhofer Institute for Solar Energy Systems ISE <https://www.ise.fraunhofer.de/content/dam/ise/en/documents/publications/studies/APV-Guideline.pdf>;

⁶ Macknick, Jordan, Heidi Hartmann, Greg Barron-Gafford, Brenda Beatty, Robin Burton, Chong Seok Choi, Matthew Davis, Rob Davis, Jorge Figueroa, Amy Garrett, Lexie Hain, Stephen Herbert, Jake Janski, Austin Kinzer, Alan Knapp, Michael Lehan, John Losey, Jake Marley, James MacDonald, James McCall, Lucas Nebert, Sujith

With these findings as a basis and best practices informing Lightstar, our agrivoltaics partners, and the Thompsons, we are looking forward to the additional agricultural possibilities that will be afforded to the site with the introduction of AgPV.

It is Lightstar's intension, together with SolAg, to leverage our local relationships with Scenic Hudson, American Farmland Trust, Cornell Cooperative Extension, and others to make the project available for research and community engagement. Lightstar's agrivoltaic portfolio, including the 189 Myers Corners Road site, was "deemed to have merit" in contributing to the scaling of commercial agrivoltaics by the US Department of Energy (DOE) Solar Energy Technologies Office (SETO) and encouraged to apply for agrivoltaic research grants to be announced in 2023.

Solar Agricultural Services is one of the premier AgPV service providers in the nation, and as such its team of farming experts, with decades of experience supporting the economic viability of farmers, writing NRCS Conservation Plans and more recently supporting several Department of Energy studies on agrivoltaic projects, are the nexus between solar developers and farmers looking to leverage agrivoltaics on their land or leased property. SolAg marries the interests of agricultural partners and developers through coordinated crop production, agricultural infrastructure, and soil improvement practices. SolAg is currently involved with over 60MW of agrivoltaic developments across four states and works to service all of Lightstar's agrivoltaic projects.

Working hand in hand with SolAg and the Thompsons, we've established a farm plan for combined production of summer squash (7 acres), blueberries (2 acres), and strawberries (2 acres). The plan will also allow for flexibility beyond the first crops, to rotate in new crops based on changing soil, weather, and market conditions. The project is expected to provide a unique microclimate created by the panels that is conducive to the growth of myriad commercial crops. New York's growing climate is prone to early or late frost which can destroy crop plans, but the microclimate of panels can protect young crops or extend

Ravi, Jason Schmidt, Brittany Staie, and Leroy Walston. 2022. The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study. Golden, CO: National Renewable Energy Laboratory.

growing seasons.⁷ SolAg will continue to work with the Thompsons to be a resource for the management and maintenance of the agricultural aspects of the 189 Myers Corners farm through the life of the solar project.

Thank you for having the vision to protect farmland and farm viability, while achieving energy independence, savings, and grid resiliency. Our team is ready and available to answer any questions. Please see our application package attached.

Sincerely,



Sam Bailly
Director of Acquisitions
Lightstar Renewables

⁷ Colorado Agrivoltaic Learning Center, "[Research Webinar: Learn About the Past Two Years at Jack's Solar Garden.](#)" [December 7, 2022](#). Matt Sturchio, Colorado State University, [59:38](#).