

April 24, 2019

Town of Farmington Planning and Zoning Boards  
1000 County Rd. 8  
Farmington, NY 14425

Dear Town of Farmington Planning and Zoning Boards, and Farmington Residents,

Delaware River Solar (“DRS”) is pleased to have the opportunity to bring the benefits of Community Solar to the Town of Farmington. DRS has proposed three Community Solar facilities that will generate, in the aggregate, approximately 7 MW of clean and “green” electricity that will be distributed over the existing electrical grid to local residents and small businesses (the “Projects”).

This letter is in response to a letter provided to the Planning Board on April 17 2019 by some Farmington residents, and listed as #81 of the Abstract for the Yellow Mills Road Solar system review. That letter refers to six (6) studies residents have requested the Planning Board have conducted. We have taken the time to respond to these concerns with this response letter.

We have copied the memo with this letter and on the following pages, we have responded in line below each requested study or area of concern.

We look forward to the May 15th public hearing, and the continued review of our application.

Sincerely,

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Daniel Compitello  
*Project Developer*



DELAWARE RIVER SOLAR

130 North Winton Road #415  
Rochester, NY 14610

1. **White noise pollution study** *(Despite opinions to the contrary, there is evidence that. We can hear each other's conversations when we're outside. Sound carries. The hum of an Inverter Station and transmission of power are unacceptable "trade-offs" for "sustainable" energy.*

**DRS Response:** DRS has provided information on the noise created by solar energy systems in our application to date, which is already supported by third party information. Please refer to the Public Hearing Comment Responses we provided at the Planning Board's request, for the December 5, 2018 Public Hearing. Please refer to Question 20 of this document, and "Appendix D – 12-5 – Decibel Scale", which can be found online at:

- [www.townoffarmingtonny.com/solar\\_committee](http://www.townoffarmingtonny.com/solar_committee)

The information we provided has been backed by third party studies of the components of solar energy systems that create noise, which are all found to be below ambient background noise levels of a quiet library. Here is a summary again:

Solar panels have no moving parts, and do not create noise. Aside from the brief construction period, the only components of the system that create noise are the 3 Inverters and 3 Transformers, one of each type is used for each system. The inverters and transformers are located 695 feet from the closest public road, inside of and surrounded by the solar energy system. At this distance, they will create noise at a level of 39.5 decibels, which is quieter than a kitchen refrigerator. This noise will be absorbed by the system, the atmosphere and the land surrounding them. Furthermore, this equipment only operates during daylight hours when the solar energy system is producing energy. After the sun sets, there is no power running through the equipment, and so they cannot operate or create noise. Unlike similar local utility's equipment located on power lines along public roads which operate 24 hours per day, our inverters and transformers are located several hundred feet inside our systems, and only operate during daylight hours.

The Town Solar Committee reviewed information on solar energy system noise, and the Town Board determined when designating Solar Systems as a permissible use in 2017, that the setbacks required for such uses and vegetative screening where needed, would be adequate in buffering noise from solar energy system components. DRS is proposing to increase these setbacks, and will provide vegetative screening, further ensuring that no noise, or white-noise, will emanate from our solar energy systems above what currently exists in your community.

**2. Electromagnetic field impact study** *(There is concern regarding the impacts of high emissions of electrical fields on the health of humans, domestic animals and wildlife. Assurances regarding this issue are sought of our leaders.)*

**DRS Response:** There will be no “high emissions of electrical fields” from the solar energy systems. In the field of Physics, electrical field emissions are more commonly referred to as Electromagnetic Emissions (EME). The only components of the solar energy system that will produce measurable EME are the three Inverters and three Transformers located well inside the system. None of these components can produce EME that can be detected outside of the solar energy system.

DRS has included Appendix A, a study conducted by the National Renewable Energy Laboratory, and the United States Navy on EME. This study “**Renewable Energy, Photovoltaic Systems Near Airfields: Electromagnetic Interference**”, concludes that EME from solar energy systems is “low-strength”. Quoting this study:

**“Prior research and field investigations of electromagnetic emission (EME) from Solar PV arrays concluded that they produce extremely low frequency EME similar to electrical appliances and wiring....At a distance of 150 feet from the inverters, these fields dropped back to very low levels of 0.5 mG or less, and in many cases to much less than background levels (<0.2mG).”**

*Note: Background levels of 0.2mG refer to the Earth’s average gravitational field strength, commonly referred to as Background Level.*

Since the Transformers and Inverters are located 695 feet inside the system from the closest public road, the EME produced by the solar energy system will dissipate inside the solar energy system before reaching the road. The **Inverse Squares Law** of Physics determines this effect. According to the definition of this law, “an effect such as [electromagnetic frequencies] or gravitational forces change in inverse proportion to the square of the distance from the source.” This means that as the distance increases between an emission source and any point, the emission strength drops off precipitously to that point. This is also why astronauts float in space, and experience weightlessness away from the pull of Earth’s gravity.

The Town Solar Committee reviewed information on solar energy system EME. The Town Board determined when designating Solar Systems as a permissible use in 2017, that the setbacks for such uses would be adequate in buffering any EME from solar energy system components. DRS is proposing to increase these setbacks, further ensuring that no detectable EME will emanate from our solar energy system.

**3. Energy Production Study** *(In considering this and other proposals for Solar in our Township, consider that short Winter days, combined with cloudy days and "down time" experienced during both winter and summer storms, a Solar Power Plant is truly productive some 35% of the time and deliver only 22% of their collected power in the Northeast. Considering the amount of land that must be committed to such a product, is it worth the loss?)*

**DRS Response:** Regarding energy production, we have already designed with great accuracy, how much power the systems will produce. The Yellow Mills Solar Systems will produce enough power for approximately 1,044 local homes per year. We know this by using an industry standard electrical engineering report called a "**PVsyst 8760 Report**". The number "8760" refers to the number of daylight hours over the course of a year. This number never changes, and this report calculates the energy a solar energy system can produce each year, using the manufacturer ratings for the equipment used in the system, the topography and design of the system, and the average annual sunlight intensity records of the geographic location of the system.

The results of our 8760 report show that we can produce 10,467,000 kilowatt hours of Alternating Current electricity, which is enough power the average annual household consumption of 1,044 homes. Anyone can replicate this report by going to [www.pvsyst.com](http://www.pvsyst.com)

Regarding building solar in the Northeast, the efficiency and capacity of solar panels today are proven to be more than capable of producing enough power to make sense in the Northeast United States – and they have for many years. New York is only just recently catching up on the benefits of solar energy, following many other states in the country. The Yellow Mills Solar systems are no different from the hundreds of other solar energy systems in New York, Massachusetts, Vermont, Maine, Rhode Island, and across the Northeast United States and Canada. You can find a map, and hourly production data for all Community Solar farms in New York State on this public website: <https://der.nyserda.ny.gov/map/> When Yellow Mills Solar is built, our power production data will also be available on this website.

The solar energy systems are a net gain for the community, the Town, and the landowner. Yellow Mills Solar will provide local, home-grown solar power direct to residents and surrounding neighborhoods. All of the power from the solar energy system stays local – by law, it can only be sold directly to RGE residential and small business customers and cannot be sold to any utility, or to areas downstate, across-state or out of state. In comparison, energy that most Farmington residents use today comes from many sources across the Northeast United States and Canada.

It is also true that the Yellow Mills Solar system will not remove the farm onsite – in fact, the farm will stay and operate as it does today, and income

from the solar energy system lease will support the farm for future generations. Local taxes from the solar energy system will be significantly more than what is currently assessed on the land, and will add to the tax base of the Town, County and School District, with no demand on local services, i.e. solar energy systems do not send kids to school, but they do pay school taxes. When the useful life of the solar energy system has been reached, the systems will be decommissioned in accordance with Town and State requirements, and the land will be returned to the landowner in the condition it is today – as grazing land.

**4. Traffic study,** *(the intersection of Fox and Yellow Mills Rd is a well-documented and a notoriously dangerous intersection with many accidents and fatalities. A large-scale Solar Power Plant with Inverter Stations would be a huge added driver distraction.)*

**DRS Response:** Any land feature, or activity on any land, can be a distraction to drivers. The existing homes, farm uses and natural features along Yellow Mills and Fox Roads can also distract drivers, and this will be true for the Yellow Mills Solar Systems. We have made several design considerations to reduce the visual impacts of our development. Traffic studies however, are not a practical tool in determining how to best buffer visual impacts, since there is no exact way to measure what may or may not distract a driver. There also will be no increase in traffic created by the solar farm, which will create less vehicular traffic than a single family home.

Here are the efforts we have made to buffer visual impacts:

1. **Landscape Screening** - Early on in our site plan application, we offered a preliminary landscape plan of trees and native shrubs to buffer views from adjacent roads. This plan is still open to comment from the Planning Board. We have encouraged comments on this design all members of the public. Please refer to the Landscape Plan prepared by Schultz Associates, and Visual Renderings provided by Saratoga Associates provided in November 2018 included in our application.
2. **Increased Setbacks From Public Roads** - The Setback Variances we have applied for will allow us to shrink the 3 separate solar energy systems into one larger footprint, and pull them further away from public roads and adjoining parcels. We have proposed to reduce the setbacks between the systems, in part to increase the setbacks from roads. Please refer to the Site Plan and Variance Applications prepared by Schultz Associates, and public comment responses provided in November, December 2018, and January 2019.

**5. Threatened and Endangered Species Study** *(Our group has found dozens of examples of wildlife impaled on chain-linked fences surrounding solar arrays and examples of birds, migratory, or other dying as a result of attracting birds to the lake effect produced by solar panels.*

**DRS Response:** For information on the complete record of all required environmental studies conducted for the Yellow Mills Solar review, please review our entire application on file with the Town Clerk.

To date, all environmental studies required for the State Environmental Quality Review (SEQR) have been completed and have found no environmental conditions or impacts that must be further studied. The SEQR form application, which was submitted in August 2018, utilizes the New York State Department of Environmental Conservation “Environmental Resource Mapper”. This tool determined there are no plant or animals listed as threatened or endangered species, or areas identified as their habitat, within the project site. Since submitting our SEQR form all State and Federal agencies have responded with letters of concurrence, stating that no additional studies are required. These notices have been provided to the Town to be made part of our application.

In regards to the statement on fencing, DRS is not proposing a chain link fence for the Yellow Mills Solar systems. Instead, as detailed in our site plan submitted in August, 2018, we are proposing a more contextual farm fence that is typical to other farm fences in the surrounding community. The proposed fence is a made from wood posts with rectangular metal fabric, commonly used in grazing pastures or around horse stables. The concern of wildlife being “impaled on chain-linked fences” is not a concern, due to no chain link fencing being used.

In regards to the statement on birds mistaking solar panels as water, which we assume is what was meant, there are 12 to 15 foot rows of spacing in between each row of solar panels that will be covered in grass and ground cover, clearly indicating visually from ground level and the air, that land exists under and around the solar energy system, and not water. From great distances away, such as when viewed from an airplane, solar farms can appear as water bodies, but not from distances at which a bird may attempt to land on such a feature. In fact, birds are often noticed nesting under solar arrays, or, in the meadows that form around and within the system after the ground cover is planted.

6. **E-Waste study** *Often used panels end up in e-waste dumps in developing countries such as India, China and Ghana where these toxic chemicals might create devastating health effects for residents.*

**DRS Response:** An e-waste study is not required for a solar farm, since the manufacturing, disposal and recycling of solar panels is a highly regulated industry that is regulated separately from solar energy system operation. If residents are interested, this topic is better directed to the National Renewable Energy Laboratory, which studies this topic in depth, and makes policy recommendations to government and industry on how to improve the lifecycle of solar energy system waste.

In the case of Yellow Mills Solar, solar panels that are discarded will be recycled or disposed of by companies that specialize in the disposal and recycling of panel materials into new panels, or other manufactured products that rely on the raw materials comprised in solar panels. Some materials may be disposed of. Solar panels that are damaged and need replacement, are removed from the site, and disposed of in accordance with the manufacturer and local disposal guidelines.

---END OF RESPONSES---