



# NEW YORK STATE WATER RESOURCES INSTITUTE

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## NY State SEQR Draft Comments By: James Knighton, Chelsea Morris

### Type 1:

#### **(2) the adoption of changes in the allowable uses within any zoning district, affecting 25 or more acres of the district;**

Land use based requirements may lead to ineffective measures of environmental impact as well as disparity in environmental protection across local municipalities due to NY municipal home rule. This particular requirement is critical in the development of large-scale clean energy operations. Local municipalities may choose to define solar, wind, and second generation biofuel practices as an industrial land use. An uncertain land-use designation coupled with this proposed SEQR Type 1 definition will place an economic uncertainty on a clean energy industry that is required to grow to meet New York's Clean Energy Standard mandate.

Further, it has specifically been shown that large-scale solar arrays have net beneficial environmental impacts (Hernandez et al 2014; Turney and Fthenakis, 2011). The change in land use towards large scale clean energy sources should be encouraged to promote environmental health.

Recommend placing a specific exemption for large-scale solar, wind, and second generation biofuel installations independent of land use designations.

Hernandez, R. R., Easter, S. B., Murphy-Mariscal, M. L., Maestre, F. T., Tavassoli, M., Allen, E. B., ... & Allen, M. F. (2014). Environmental impacts of utility-scale solar energy. *Renewable and Sustainable Energy Reviews*, 29, 766-779.

Turney, D., & Fthenakis, V. (2011). Environmental impacts from the installation and operation of large-scale solar power plants. *Renewable and Sustainable Energy Reviews*, 15(6), 3261-3270.

#### **(6) activities, other than the construction of residential facilities, that meet or exceed any of the following thresholds; or the expansion of existing nonresidential facilities by more than 50 percent of any of the following thresholds:**

##### **(i) a project or action that involves the physical alteration of 10 acres;**

Physical alteration is an ambiguous term. Stream restoration is a physical alteration that typically modifies the geomorphology and flora of a stream for environmental benefits, and yet is not commonly considered "green infrastructure."

Recommend providing a formal definition for "physical alteration" within the document.

##### **(ii) a project or action that would use ground or surface water in excess of 2,000,000 gallons per day;**

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The use of 2 MGD (3 cfs) would result in negative effects for many natural water bodies. Most headwater streams would be significantly negatively impacted by any withdraws of this order. It has been shown that low-order surface waters (in addition to providing a critical habitat for freshwater biota) are effective natural sinks for the removal of harmful nutrients (for supporting evidence please see the seminal work of Peterson et al [2001]). Headwater streams, while arguably the most environmentally critical surface waters, are particularly vulnerable due to the ambiguity of the Clean Water Act on headwater streams.

Many NY state surface water bodies are considered impaired for use (see NYS Section 303(d) list) due to persistence of eutrophic conditions resulting from excessive nutrient runoff from agricultural land. Creating additional protection for headwater streams, independent of land use, supports nutrient reductions in surface waters. Providing a natural barrier for agricultural runoff would also reduce legislative, economic, and societal pressures placed on the agricultural industry to control nutrients on individual properties.

Recommend removing the discharge threshold of 2 MGD to include all projects that involves any usage of surface or groundwater. Further, the definition of “use” is ambiguous. Suggest expanding description to define use.

Peterson, B. J., Wollheim, W. M., Mulholland, P. J., Webster, J. R., Meyer, J. L., Tank, J. L., ... & McDowell, W. H. (2001). Control of nitrogen export from watersheds by headwater streams. *Science*, 292(5514), 86-90.

**(8) any Unlisted action that includes a nonagricultural use occurring wholly or partially within an agricultural district (certified pursuant to Agriculture and Markets Law, article 25-AA, sections 303 and 304) and exceeds 25 percent of any threshold established in this section;**

Agricultural use is an ambiguous term that includes significant operations to produce ethanol and distillers dried grains with solubles (DDGS) from corn within NY state. While this is currently classified as an agricultural use, this is in fact an industrial land use with an end product of carbon based fuel.

New York produces 4,111,000 barrels of ethanol per year (US EIA, 2014). Based on USDA (2016) and US EIA (2016) estimates of NY agricultural production, corn ethanol accounts for approximately 30% of all corn cropland in New York state. For comparison, sweet corn (produce corn) accounts for 16,700 acres (1.4% of corn cropland). It can be argued that corn ethanol produces feed in the form of DDGS (an ethanol processing byproduct); however, the DDGS from NY state corn ethanol accounts for only 6% of the NY cattle feed requirements. Corn ethanol production generates much less feed per unit land area than corn grain, silage, or open dairy pasture. The continued protection of ethanol producing agricultural land does not provide the intended environmental benefits of SEQR.

Agricultural land which is no longer financially viable provides an opportunity to farmers and the renewable energy industry to convert significant land into large scale renewable energy operations while providing farmers with a more consistent income source. This SEQR requirement, while well intentioned, could actively counter efforts to meet the New York’s Clean Energy Standard mandate by regulating clean energy sources more harshly than a carbon based fuel source.

Recommend funding additional research to determine the net environmental benefits of solar land use before revising SEQR around solar issues.

**Type 2:**

**(4) [3] agricultural farm management practices, including construction, maintenance and repair of farm buildings and structures, and land use changes consistent with generally accepted principles of farming;**

Many NY surface waters are considered impaired for use due to eutrophic conditions (see NYS Section 303(d) list). This eutrophication of surface waters has been repeatedly shown by NY DEC and independent scientific research to be directly related to agricultural runoff.

The “generally accepted principles of farming” within NY includes the spreading of excess animal manure (a waste product) as “fertilizer” to avoid disposal costs (Hively et al 2004; Giasson et al 2003; Klausner et al 1998). This fertilizer is applied in excess of plant growth nutrient requirements. Excess N and P applied to crops: 1) runs off into surface waters causing nutrient accumulation (eutrophication) and harmful algal blooms in larger surface water bodies and 2) dangerously enriches soil P from a natural baseline of 5 mg/kg up to 25 mg/kg, creating a long-term economic and environmental problem for NY.

Due to the past and current farming practices that have resulted in environmental degradation, expansion or modification of any agricultural land must be classified as a Type 1 activity as this likely would result in a negative environmental impact.

Giasson, E., Bryant, R. B., & Bills, N. L. (2003). Optimization of phosphorus index and costs of manure management on a New York dairy farm. *Agronomy journal*, 95(4), 987-993.

Hively, W. D., Bryant, R. B., & Fahey, T. J. (2005). Phosphorus concentrations in overland flow from diverse locations on a New York dairy farm. *Journal of Environmental Quality*, 34(4), 1224-1233.

Klausner, S. D., Fox, D. G., Rasmussen, C. N., Tylutki, T. P., Chase, L. E., Stone, W. C., ... & Wright, P. E. (1998). Improving dairy farm sustainability I: An approach to animal and crop nutrient management planning. *Journal of Production Agriculture*, 11(2), 225-233.

**(8) [6] maintenance of existing landscaping or natural growth;**

Maintenance of existing landscaping may have a negative impact. For example, spreading of fertilizers to maintain lawn area can contribute to eutrophic conditions in surface water bodies and surface erosion. Suggest moving “landscaping” greater than 5 acres to Type 1 classification.

**(15) Installation of five megawatts or less of solar energy arrays on a sanitary landfill, brownfield site that has received a brownfield site clean-up order certificate of completion (under 6 NYCRR 375-.3.9), waste-water treatment facilities, sites zoned for industrial use or installation of five megawatts or less of solar canopies at or above residential and commercial parking facilities (lots or parking garages).**

The peak instantaneous power cap of 5 MW places an undue economic burden on a growing NY clean energy industry. The New York’s Clean Energy Standard mandate requires that 50% of the state’s electricity come from renewable resources. This equates to approximately 332500 MW-hours. The 5 MW limit (approximately 25 acres) and resulting SEQR designation

disincentives the development of large scale solar farms that will be required to meet the Clean Energy mandate.

Further, there is no substantial evidence that solar farms have a worse environmental impact than that of open land or pasture. Cook and McHuen (2011) demonstrate that there is no appreciable influence from solar farms on the rainfall-runoff processes of open land that would adversely affect water quality or flooding. Similarly, Turney & Fthenakis (2011) and Hernandez et al (2014) performed a detailed review of environmental impacts of solar farms. Their research concluded that solar farms have no detrimental environmental impacts and numerous environmental benefits.

Recommend removing the cap on power output and expanding to include all land uses except natural areas (forest, wetlands, etc.).

Cook, L. M., & McCuen, R. H. (2011). Hydrologic response of solar farms. *Journal of Hydrologic Engineering*, 18(5), 536-541.

Hernandez, R. R., Easter, S. B., Murphy-Mariscal, M. L., Maestre, F. T., Tavassoli, M., Allen, E. B., ... & Allen, M. F. (2014). Environmental impacts of utility-scale solar energy. *Renewable and Sustainable Energy Reviews*, 29, 766-779.

Turney, D., & Fthenakis, V. (2011). Environmental impacts from the installation and operation of large-scale solar power plants. *Renewable and Sustainable Energy Reviews*, 15(6), 3261-3270.

**(16) installation of five megawatts or less of solar energy arrays on an existing structure that is not listed on the National or State Register of Historic Places or located Page 16 of 44 within a district listed in the National or State Register of Historic Places or on a structure or within a district that has not been determined by the Commissioner of the Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places pursuant to sections 14.07 or 14.09 of the Parks, Recreation and Historic Preservation Law;**

Recommend removing the 5 MW cap on solar energy output and expanding to include all land use types except natural areas.