STATE OF VERMONT
PUBLIC UTILITY COMMISSION

21-3587-NMP

Petition of Norwich Upper Loveland Road Solar LLC For a certificate of public good pursuant to 30 V.S.A. §§ 248 and 810, authorizing installation And operation of a 500 kW (AC) photovoltaic Group net-metering system in Norwich, Vermont	

PREFILED TESTIMONY OF STEPHEN GORMAN

December 1, 2022

Exhibits:

NN-SG-1 Resume
NN-SG-2 Forest Value and Carbon Costs Associated with the proposed 500kW Solar Array off of Upper Loveland Road in Norwich, Vermont
NN-SG-3 Other Considerations Associated with The Carbon Costs of the proposed 500kW Solar Array off of Upper Loveland Road in Norwich, Vermont

Summary of Testimony:
Stephen Gorman presents testimony about the value of the forest and carbon costs associated with the proposed 500 kW Solar Array on Upper Loveland Road in Norwich, addressing the criteria 30 V.S.A. § 248(b)(5) (aesthetics, historic sites, air & water purity, the natural environment, the use of natural resources, and public health and safety) and 30 V.S.A. § 248(b)(5); 10 V.S.A. § 6086(a)(1) (noise, air & water purity and greenhouse gas impacts).

PREFILED TESTIMONY OF STEPHEN GORMAN

Q1. Please state your name, address, and occupation.

A1. Stephen Gorman, 504 Hawk Pine Road, Norwich, VT 05055. I am a photographer, writer, and book author. My work focuses on understanding how we depend on the ecosystems around us to sustain our material and spiritual lives, how we adapt to and modify the landscapes in which we live and work, and how our cultural values and our national mythologies shape our relationships with the world we live in and the diverse societies we share it with.

Q2. Have you previously testified before the Public Utility Commission or other judicial or administrative?

A2. No.

Q3. What is the purpose of your testimony?

A3. My testimony addresses the values of forests, in particular the forest proposed to be cut for the solar project, including the role forests play in reducing Greenhouse Gas Emissions.

Q4. How long you have been aware of the effects of climate change and the value of forests?

A4. I wrote my first report on the effects of climate change on northern forests as a graduate student at the Yale School of Forestry and Environmental Studies (now the Yale School of the Environment) in the spring of 1988, several months before James Hansen testified before Congress that the greenhouse effect had been detected and that it was changing our climate.

Q5. When did you first learn about this proposal to construct a commercial solar array on a forested parcel in Norwich?

A5. I first learned about the proposal from my neighbor Jay Benson, who contacted me immediately after he learned about it. This was in mid-December 2021.

Q6. How has your work as a photographer and writer on environmental issues informed your response to this solar project?

A6. I have spent most of my career in resource conflict zones where industrialization threatens local cultures and ecosystems, and this project is no different. In the early 1990s I lived and traveled with Cree hunters in the watershed of the Great Whale River, where Hydro-Quebec planned to build a major system of hydroelectric dams and impoundments that would have destroyed the sub-arctic ecosystem and the traditional Cree way of life. Last April I lived and traveled with the Sami -- the semi-nomadic reindeer herders who are the EU's only remaining Indigenous people -- in Arctic Norway, where the government wants them off the land so that it can be opened to mining companies planning to extract minerals for the so-called "green transition."

Q7. Have your experiences living and working in the Arctic led you to accept the idea that humans must respond to climate change by converting electric generation from fossil fuels to renewables like solar as quickly possible, and that we must build solar everywhere possible?

A7. No, not at all. In fact, just the opposite. I have spent decades living and working in the world's last healthy and intact ecosystems. The fact that these ecosystems are thriving is no accident. Because traditional rural and Indigenous societies require healthy environments to

sustain themselves and to maintain their cultural identity, they lead lifestyles that are respectful towards natural resources, and thus they have minimal impact on the environment. Building solar everywhere simply means maintaining our wasteful fossil-fueled consumer culture -- just powering it by other means -- and it cannot solve the problems caused by our fossil-fueled consumer culture. Such a massive buildout is neither respectful towards natural resources nor does it have a minimal impact on the environment. Destroying the environment in order to build industrial solar projects everywhere will not save the environment.

Q8. Given that much of your work has focused on wilderness and remote places, why does a forested parcel near downtown Norwich, Vermont matter in the grand scheme of addressing climate change?

A8. Leaving this forest intact and standing is the equivalent of taking 514 cars off the road every year, year after year. That's a sizeable portion of the Norwich vehicle fleet. If we are serious about addressing climate change we need to protect every single acre (each storing the emissions of 62 cars) of carbon capturing and sequestering forest,

Q9. This is not a large forest tract. Does it matter if we lose these 8.2 acres?

A9. Yes it does. Every acre counts. In Vermont we are losing our forests by tracts large and small, every day, year in and year out, and that is a major contributor to climate change. Remember, soil is the world's largest terrestrial carbon pool, and in our northern hardwood forests the soil stores up to 50 percent of total ecosystem carbon. Logging and industrial land-use changes such as the planned solar installation at Upper Loveland Road are major causes of soil carbon release. Cutting our local forests loosens up the carbon stored in the forest soils, releasing

it into the atmosphere as carbon dioxide and contributing to climate change. Please refer to my Report for details about the values of forests.

Q10. If you cut the trees down, they will grow back. What is the impact if the 8.2 acres is cut, and then they are allowed to grow back 25 years from now?

A10. The impact is significant if you care about climate change. Mature forests store significantly more soil organic carbon in stable carbon pools than do soils from cut stands. If you want to keep carbon out of the atmosphere and combat climate change, don't cut down forests.

Q11. The applicant claims that the solar project will offset fossil fuel emissions in the region and result in a greater reduction in Greenhouse Gas Emissions than the 8.2 acres of forest stores. How do you respond to that claim?

A11. There are excellent reasons why carbon offsetting programs recommend the following practices: 1. Preventing deforestation; 2. Reforestation; 3. Improving and maintaining forestry management. I do not believe that the applicant is providing a full accounting of their carbon inputs and outputs and that they are outsourcing, or externalizing, the full carbon costs of their project. We need a full accounting of the project carbon emissions for the extracting, transporting, and manufacturing of the materials; for the installation, operation, and decommissioning of the project; and for the carbon costs of integrating the intermittent solar generated electricity into the grid. A full accounting of carbon inflows and carbon outflows will enable Vermont environmental policy makers to implement more sustainable resource use strategies.

Q12. Are there any other environmental issues associated with solar electricity that you would like to mention?

A12. Yes there are many. Please see Exhibit NN-SG-3 which details issues associated with solar electricity.

Q13. In your professional opinion, having seen climate change firsthand in the Arctic and with your extensive educational background, will this project have an undue adverse impact on the natural environment, and the use of natural resources?

A13. Yes it will. For decades I have traveled extensively in the Arctic from Alaska, Canada, Greenland, and Norway, and I have seen and documented the impacts of climate change on the environment and on the traditional human cultures that depend upon healthy stocks of natural resources for their livelihoods. The environmental and cultural devastation of this project are enormous. The local ecosystem will be destroyed. The negative impacts -- of mining, smelting, manufacturing, transporting, installing, operating, decommissioning, integrating the intermittent electricity into the grid, and dealing with the waste -- will all be outsourced. The costs will be borne by the natural environment, and by the traditional cultures that bear no responsibility for climate change whatsoever. They are, of course, out of sight and out of mind.

Q14. Does this conclude your testimony?

A14. Yes.