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Mark S. Ells, Barnstable Town Manager  
367 Main Street  
Hyannis, MA 02601

June 28, 2024

Dear Manager Ells:

On behalf of the Healey-Driscoll Administration, we want to express our gratitude to you and the citizens of Barnstable for your leadership and partnership in the clean energy transition. The Cape, Islands, and South Coast communities serve a critical role in Massachusetts' pursuit of energy independence. We appreciate your collaborative efforts to ensure our cities and towns are supported as we navigate this new, uncharted opportunity to provide a clean, affordable future for us all.

As offshore wind project construction is underway, we are writing to respond to concerns raised regarding the safety of Barnstable beaches and risks to groundwater supplies and the surrounding environment. In particular, we would like to address electromagnetic field (EMF) exposure and contamination risk from the proposed energy infrastructure (i.e., underground cables and substation).

On behalf of the Massachusetts Executive Office of Energy and Environmental Affairs (EEA), the Department of Public Health (DPH) and the Energy Facility Siting Board (EFSB), we want to emphasize that, based on the project review and recent readings, the projects are safe.

In addition, we have also included a review of the measures taken to minimize any risk of contamination from substations, as well as a discussion of the extensive process undertaken by the EFSB to ensure the safety of sited projects. Finally, it is worth noting the substantial public benefits produced by these energy infrastructure projects for the Commonwealth as well as the Cape, Islands, and South Coast communities.

## Electromagnetic Fields

Transmission, distribution lines, and substations are critical energy infrastructures that are necessary to power the areas and spaces we occupy daily: our homes, businesses, restaurants, and other common public indoor areas that use energy. This infrastructure is all around us, including on telephone poles lining our streets as well as undersea cables connecting the islands to the regional grid. Electromagnetic fields from transmission lines like those used for offshore wind generally decrease substantially with distance from the conductors<sup>1</sup> and are similar cables to ones that are in use and have been buried under beaches along the coast of Massachusetts, including Cape Cod, Nantucket, and Martha's Vineyard, for decades.

The Martha's Vineyard cables that are connected to Falmouth by five 23 kV cables are one such example. One cable was recently replaced due to its age (37 years old), and an additional new cable was installed. These cables bolster Martha's Vineyard's energy capacity and reliability, meeting the growing needs of the island while simultaneously decreasing its carbon footprint due to the decommissioning of five diesel generators previously used.

On Nantucket, there are two undersea cables connecting to the Cape at Hyannis and Harwich, ending the need to use the Nantucket Electric Company's dirty power plant, which operated on massive diesel generators, in 1996. An additional undersea cable was installed in 2006 to meet the island's increasing energy demands. Both of these cables have operated quietly and without impacting the health and wellbeing of residents in the communities where they are hosted.

The transmission lines under Covell's Beach and those proposed for Craigville and Dowses beaches produce low level electromagnetic fields. By comparison, the ordinary use of a vacuum, an electric shaver, or keeping the television on produces stronger electromagnetic fields than an electric cable.<sup>2</sup> The transmission lines are sufficiently buried at the shoreline to be out of sight and minimize any potential impacts to the beach. Further, the electromagnetic fields testing of the transmission lines at Covell's Beach showed readings on the beach were recorded as 1-2 milliGauss ("mG") before increasing to 3-5mG in the parking lot and close to 40mG as the cables come together and continue under the roadway, an average recorded reading for existing electric infrastructure under our roads today. These readings match what was modeled as part of the EFSB's review and approval of the project<sup>3</sup>

In addition to being buried, there is additional protection from a shielding effect of the steel armoring wire forming the outer portion of the cables, which is estimated to reduce levels by approximately 50 percent.<sup>4</sup> For these and other reasons, it is likely that individuals standing directly above the cables on the beach will not be exposed to significant levels at any given moment.<sup>5</sup> For reference, typical baseline electromagnetic fields inside residences range from 0.5-

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<sup>1</sup> Bureau of Ocean Energy Management Environmental Studies: Electromagnetic Fields(EMF) from Offshore Wind Facilities, December 2023.

<sup>2</sup> [Park City Wind LLC](#), EFSB 20-01/D.P.U. 20-56/20-57, at 84 n.67, 89 (2023) (at one feet away, operating appliances such as a vacuum generate magnetic field levels in the range of 40-300 Milligauss ("mG") and shavers, hair dryers, and massagers half a foot away can range from 600-700 mG); [Vineyard Wind LLC](#), EFSB 17--05/D.P.U. 18-18/18-19, at 76 (2019) (reporting maximum, conservatively modeled magnetic fields of 3.6 and 21.1 mG between the middle of Covell's Beach and landward edge of the beach).

<sup>3</sup> EFSB 17-05/D.P.U. 18-18/18-19, at 76.

<sup>4</sup> EFSB 17-05/D.P.U. 18-18/18-19, at 75.

<sup>5</sup> EFSB 17-05/D.P.U. 18-18/18-19, at 76 n. 89.

5.0 mG. The levels produced by the cables are roughly comparable to or below levels that an average person might be exposed to at any time throughout the course of a given day.<sup>6</sup>

The World Health Organization (WHO) concluded that “[magnetic field] exposures below the limits recommended in the [International Commission on Non-Ionizing Radiation Protection \(“ICNIRP”\)](#) international guidelines do not appear to have any known consequence on health.<sup>7</sup> The ICNIRP recommended exposure limit is 2,000 mG, which is nearly 95 times greater than that highest modeled value for the Vineyard Wind cables at Covell’s Beach.<sup>8</sup>

Furthermore, there is no evidence to support the suggestion that electromagnetic fields from offshore wind cables negatively impact marine species or fish populations caught from commercial and recreational fishing expeditions. DPH has reviewed EEA’s conclusions, which are consistent with federal guidance on EMF, and has concluded that there is little to no known risk to public health at these levels. Accordingly, the public should not be fearful of EMF-related impacts to beach, water or other activities in the Barnstable area from these projects.

### **Contaminants from Substations**

The proposed substations that connect electricity generated from offshore facilities to the grid have been designed for maximum safety and security. The equipment used in the substations will contain sulfur hexafluoride (SF6), a non-flammable, non-toxic gas that is needed to operate circuit breakers, switch gears, and other electrical equipment. In addition, mitigation measures designed to prevent any SF6 leakage from the substations will be implemented, and the installed equipment reduces the air impacts to be far lower than the applicable MassDEP regulations.<sup>9</sup>

There are also several mitigation measures that will be implemented at the substations to prevent any risk to groundwater supplies and the surrounding environment. These include: an integrated fluid containment system with capacity capable of capturing at least 110 percent of any components containing dielectric fluid, plus additional capacity for extreme rainfall events; a Stormwater Management Plan and Erosion and Sedimentation Plan, including a stormwater management system in conformance with the Massachusetts Stormwater Management Standards; and a Spill Prevention, Control, and Countermeasures Plan. Additionally, in the Spill Prevention Plan, containment kits and other spill control tools will be strategically placed around the substations and the developers have committed to hiring a spill-response contractor. The combination of these measures effectively assuages any concerns regarding the potential release of a pollutant from the substation into the groundwater.<sup>10</sup>

The substation’s Stormwater Management Plans have been upgraded beyond current standards to accommodate stormwater from an extreme weather event as defined by the Town’s engineering

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<sup>6</sup> EFSB 20-01/D.P.U. 20-56/20-57, at 83-84.

<sup>7</sup> EFSB 20-01/D.P.U. 20-56/20-57, at 84, 89 (noting that the Project’s range of modeled magnetic fields for the Offshore Export Cables, at either landfall site, are comparable to values that the EFSB has previously approved in numerous proceedings, and far below magnetic field safety threshold established by ICNIRP and referenced by the WHO).

<sup>8</sup> International Commission on Non-ionizing Radiation Protection (ICNIRP) ICNIRP Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz) *Health Phys.* 1998;74:494–522.

<sup>9</sup> EFSB 20-01/D.P.U. 20-56/20-57, at 130 (“The Company stated that it will require its equipment manufacturer to guarantee a maximum annual leak rate of less than 0.1 percent”).

<sup>10</sup> EFSB 20-01/D.P.U. 20-56/20-57, at 127.

consultants. These plans ensure resiliency during weather events like widespread flooding or drenching rains that have affected energy infrastructure in past years.

In addition to the protections required by the state and federal entities, Barnstable has negotiated additional protections for its residents through Host Community Agreements (HCA). These HCA's can and do provide a valuable opportunity for municipalities to negotiate additional protections for their residents' concerns in ways that best meet the focus of their community. Barnstable's agreements not only specify that the construction and operation of the transmission lines and substations minimize impacts on the environment and public, but that the developer sufficiently addresses any concerns regarding risks to Nantucket Sound and the Town's public drinking water supplies.

### **EFSB Process**

The EFSB employs a consistent and comprehensive standard of review for all proposed facilities, and offshore wind projects are no different. Massachusetts law requires that the EFSB determine whether a project would provide a reliable energy supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. The EFSB also determines whether a project is consistent with the current health, environmental protection, and resource use and development policies adopted throughout the state.<sup>11</sup> Both Park City Wind and Vineyard Wind were subject to EFSB processes that were conducted over multiple years before a final decision was made. Over the course of the EFSB proceedings for the Vineyard Wind and Park City Wind projects, designs evolved to address concerns of impacted communities, and opportunities to avoid and minimize environmental impacts in the area. Offshore wind projects are also subject to numerous reviews at the federal, state, regional, and local levels.

### **Benefit to the Public**

It is important to remember that these projects will further enhance our shared goals as established by the Legislature through the Massachusetts Global Warming Solutions Act and the resulting Clean Energy and Climate Plan. Projects like these provide significant benefits to Massachusetts residents and businesses. Cape Cod and the Islands are areas that are particularly vulnerable to the impacts of climate change and projects like this help to lessen those impacts by accelerating the transition to a clean electric grid.

Moreover, these projects are of tremendous benefit to public health by avoiding harmful greenhouse gas emissions and associated pollutants that lead to respiratory and other illnesses. Cape Cod and the Islands have previously been powered by coal, oil, and natural gas generation, which have significant public health impacts.

Clean reliable electric service is also essential to our economic competitiveness. Hospitals, businesses, schools, and municipal and state buildings need reliable electricity to work efficiently and safely. It is also critical to the growth of housing and the development of basic infrastructure, such as wastewater treatment. Without these projects we risk not only our climate but also our economic prosperity and future in Massachusetts.

It is paramount that as we transform the way we harness clean energy, that our efforts are led by facts and science. It is our intention with this correspondence to provide you with the public

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<sup>11</sup> G.L. c. 164, § 69J.

health and safety information as they have been researched, studied, and implemented. We stand ready to assist you in navigating these complex conversations. We urge the public to be wary of increasing disinformation about common electric infrastructure, which is extensively vetted by environmental and permitting experts as well as independent academics prior to installation.

Barnstable residents should not be dissuaded from enjoying the beach this summer, but rather proud of their important role in the fight against climate change, and confident that the electric transmission lines pose no known threat to public health or safety. Thank you again to the Town of Barnstable and its leadership for your critical role in making the state's clean energy transition a reality.

Sincerely,



Michael Judge  
Undersecretary of Energy  
Executive Office of Energy & Environmental Affairs



Dr. Robbie Goldstein  
Commissioner  
Department of Public Health

Cc:

Senator Julian Cyr  
Representative Kip A. Diggs  
Representative Steven Xiarhos  
Felicia Penn, President Barnstable Town Council  
Gordon Starr, Barnstable Town Council  
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