REQUEST FOR APPLICATIONS

Greentown Labs requests applications for innovative startup companies able to enhance real-time detection of North Atlantic Right Whales and other protected species in the waters off the northeastern United States. We are seeking concepts, with a technology readiness level (TRL) between 3 and 6, with a proof of concept that can be brought to a state of practice, with the overall goal of supporting the continued growth of the offshore wind renewable energy industry. The Offshore Wind Challenge is a program in partnership with Vineyard Wind, an offshore wind renewable energy company developing the nation's first utility-scale offshore wind project over 15 miles off the coast of Massachusetts.

Selected Offshore Wind Challenge participants are eligible for the following awards and benefits, including:

- Acceptance into Greentown Launch, a 6-month partnerships acceleration program for startups, hosted at Greentown Labs, the largest cleantech incubator in North America
- A structured platform to explore potential partnership outcomes with Vineyard Wind
- Exclusive access to the Greentown Labs and Vineyard Wind networks
- Desk space and membership within Greentown Labs for the duration of the program
- Mentorship, networking opportunities, and partnership-focused programming from the Greentown Labs ecosystem of cleantech startup experts
- Access to mentorship from the world's leading offshore wind engineers, scientists, and permitting specialists
- Access to various offshore wind organizations and suppliers

Why the Offshore Wind Challenge and What Vineyard Wind Is Looking For

One of the most valuable, reliable, and cost-effective renewable resources on the East Coast is offshore wind energy[1]. Harnessing the potential of offshore wind will increase grid reliability and diversity, while reducing greenhouse gas emissions from other non-renewable power generation sources. Over the last two years, several states have announced plans to procure over 22,000 MW[2] of offshore wind energy over the next decade, representing billions of dollars in investment and economic development opportunities.

The 800MW Vineyard Wind I Project will be the nation's first large-scale offshore wind project and eliminate 1.68 million metric tons of carbon dioxide emissions annually - the equivalent of taking 325,000 cars off the road.

Vineyard Wind is committed to building a new US offshore wind energy industry that is both cost effective for electricity customers and environmentally responsible. That means protecting the

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[1] https://www.nrel.gov/docs/fy16osti/66599.pdf
[2] https://www.awea.org/Awea/media/Resources/Fact%20Sheets/Offshore-Fact-Sheet-Oct-2019.pdf

marine environment and its inhabitants during all phases of project development in one of the world's most challenging environments: the ocean.

Greentown Labs and Vineyard Wind are seeking startups, with a technology readiness level (TRL) between 3 and 6 and a proof of concept that can be brought to a state of practice to address one of the following focus areas in marine mammal monitoring: data collection and real-time transmission or data analysis.

Program Scope

The purpose of this RFP is to accelerate the development and commercialization of innovative technology that will support real-time marine mammal monitoring offshore. All aspects of data logging, transmission, and processing related to marine mammal detection are crucial for responsible offshore wind development. From project siting to long-term maintenance, responsible offshore wind development and operation requires access to the best available science and data collected from field efforts during site assessment and construction, and operations and maintenance to achieve minimal impacts to North Atlantic Right Whales and other protected species.

Examples of critically important data include:
- Passive acoustic monitoring data
- Aerial digital photography

Limitations in current technology include the logistics of accessing in-situ data loggers and the dynamic marine environment. We are seeking innovations to improve methods of collecting and analyzing real-time marine mammal monitoring data in a safe, environmentally friendly, and efficient way. These technologies should align with current best management practices and public policies.

Advancements in either of these areas would increase safety, reduce environmental impacts, increase protections to sensitive habitats, and create work stream efficiencies. If acceptable to regulators and industry, these innovations have the potential to be used to support the permitting and regulatory compliance of offshore wind projects.

Offshore Data Collection and Transmission
To meet marine mammal monitoring and mitigation requirements for offshore wind development activities, observers must be stationed aboard active vessels to visually and acoustically monitor for the presence of protected marine species. The need for observers can be partially attributed to challenges with remote data collection and transmission in the offshore environment including geography, weather, sensitive habitats, and conflicting stakeholder interests. On-board observers can analyze the monitoring data in real-time to inform timely mitigation measures for the protection for marine mammals. Currently, autonomous marine mammal monitoring is either archival or near real-time. Limitations with the size and type of data that can be transmitted

wirelessly, lengthy end-to-end delays, as well as sufficient bandwidth and network availability are a few major challenges needed to be addressed. As such, we are seeking innovative technologies to improve marine mammal monitoring data collection and/or reliable, wireless transmission in real-time. This could include advancements to:

- Drones
- Autonomous underwater vehicles (AUVs)
- Fuel cell powered buoys
- Unmanned surface vessels (USVs)
- Remotely operated vehicles (ROVs)
- Sensor technologies
- Satellite data transmission
- Thermal imaging
- Infrared imaging

Offshore data analysis

The application of artificial intelligence (AI) and computer learning algorithms in ecological data analysis is a relatively new advancement in the offshore wind industry. Currently this technology is being developed and refined to support the processing of marine mammal data. This technology is currently limited by reliability of the algorithms, capability to process data in real-time, and overall acceptance by the scientific and regulatory community. **This could include innovations to AI and computer learning algorithms in detecting and localizing the presence of protected species in real-time to support the execution of appropriate mitigation measures for the protection of these species during site assessment, construction, and operations.**

These examples are not meant to be exhaustive, but rather to indicate the possibilities available.

Partnership with Vineyard Wind

Vineyard Wind is open to opportunities to work with startups on a proof-of-concept/technical validation study. Vineyard Wind is also open to working collaboratively on future advancement efforts with the startups, other industry leaders, and academic institutions.

With support from Vineyard Wind, the selected startups will receive guidance from top offshore wind industry leaders during the six-month Greentown Launch program and beyond. Subsequently, the startups will have the opportunity to grow their business network across the burgeoning offshore wind industry and develop a client base to support their business development.

Eligibility

- Submit your completed application through the online portal by May 31, 2020

- Be available for Skype interviews and in-person interviews after the close of the Round 1 application deadline, if selected for further rounds
- Disclose the status of any intellectual property (IP) relevant to your submission. **Do not submit confidential information in the application process.** Should you be selected as an awardee, your IP will be fully protected throughout the process
- The more defined your problem and solution, the better!
- If you are selected as an Offshore Wind Challenge participant, a CEO/founder of your company will be required to attend five events at Greentown Labs in Somerville, MA, in order to enjoy full program benefits. This requirement is strictly enforced in order to honor the time of volunteer mentors and other contributors. A tentative timeline is as follows:
  - Kickoff Event: July 22, 2020
  - Workshop 1: September 9-10, 2020
  - Workshop 2: November 4-5, 2020
  - Workshop 3: January 13-14, 2021
  - Final Showcase: February 24, 2021

<u>About Greentown Labs</u>

Greentown Labs is a community of bold, passionate entrepreneurs creating solutions for today's biggest climate and environmental challenges. Located in Somerville, MA, and founded in 2011, Greentown Labs is the largest cleantech incubator in North America, operating a 100,000 sq. ft. campus comprised of prototyping and wet lab space, shared office space, a machine shop, electronics lab, and a curated suite of programs and resources. Greentown Labs is home to more than 100 startups and has supported more than 250 startups since its inception. These startups have collectively created more than 6,500 direct jobs and have raised more than $750 million in funding. The incubator's mission is to provide entrepreneurs with the community, resources, and space they need to thrive. For more information, please visit www.greentownlabs.com or on Twitter, Facebook, or LinkedIn.

<u>About Greentown Launch</u>

Greentown Launch is a 6-month, industry specific, structured acceleration program designed to drive deals between entrepreneurs and corporate partners. Over the last five years, Greentown Labs has run six Greentown Launch programs that have resulted in at least 16 partnership outcomes for startup participants and our corporate sponsors. We facilitate these deals through over 80 hours of intensive business training, hands-on mentorship from industry experts, and a unique model of startup and corporate relationship-building. Beyond our unique partnership curation program, startups accepted into this program gain the ability to access our network of over 150 investors and over 40 corporate partners while gaining access to state-of-the-art lab, business, and software tools including SOLIDWORKS, a machine shop, electronics equipment, a wet lab, and legal and marketing support.

The program is hosted at Greentown Labs, one of the world's most renowned cleantech innovation hubs. Entrepreneurs selected for this program will receive desk space at Greentown Labs for the duration of the 6-month program.

About Vineyard Wind

Vineyard Wind LLC is an offshore wind development company seeking to build the first large-scale offshore wind energy project in the US, to be located 15 miles south of Martha's Vineyard. Vineyard Wind, based in New Bedford, Massachusetts, is 50 percent owned by funds of Copenhagen Infrastructure Partners (CIP) and 50 percent by Avangrid Renewables. For more information, visit www.vineyardwind.com.

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