

OCS-A  
0501



MASS  
USA

**VINEYARD WIND**

**Vineyard Wind**

**Attachment 14.1-1**

**REDACTED**



**VINEYARD WIND**

**Vineyard Wind**

**Attachment 14.1-2**

**Supply Chain Letters of  
Support**

## 1. Introduction

Below is the wide range of support letters from the offshore wind supply chain obtained from potential Tier 1 and Tier 2 supply chain partners to Vineyard Wind. The support letters received are from a selection (not all) of the supply chain players that Vineyard Wind has or will be interacting with in developing the Project, as further described in section 8.1.iv-8.1.vi.

## 2. Background

The support letters included in this attachment have been obtained by Vineyard Wind as part of the extensive supply chain dialogue the project has had since 2016. The suppliers listed below, as well as a range of other suppliers not included below, have contributed with their vast experience and provided the project with very valuable information and input to the project management plan and project schedule.

Vineyard Wind is confident that there is a very strong, ready, and capable supply chain poised to support Vineyard Wind in becoming the nation's first commercial scale offshore wind project and to support Vineyard Wind's vision of making Massachusetts the powerhouse of the US offshore wind industry.

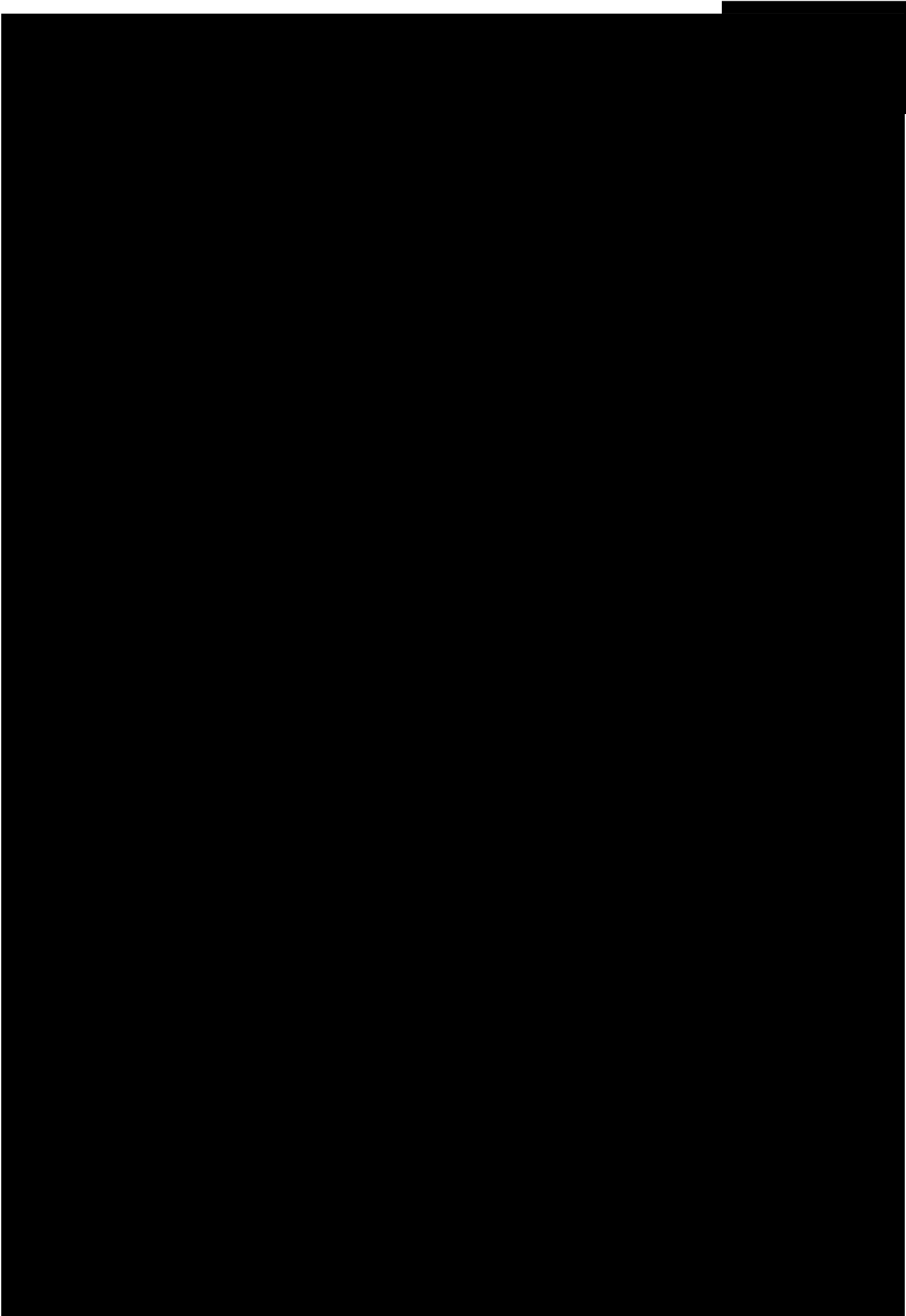
## 3. Overview of supply chain support letters

Suppliers listed in alphabetical order per category.

Item	Supply chain support letters
1	Wind Turbines
1.1	████████████████████
1.2	████████████████
1.3	Ventower Industries
2	Foundations
2.1	Bladt Industries
2.2	EEW Special Pipe Constructions
2.3	Smulders Group (same as 3.3)
3	Electrical Service Platform
3.1	Bladt Industries – Semco Maritime
3.2	Cianbro Corporation
3.3	Smulders Group (same as 2.3)
3.4	Siemens Industry
4	Design
4.1	CLE Engineering Inc.

4.2	Keystone Engineering Inc.
5	Logistics/Installation
5.1	All Coast LLC
5.2	Fred. Olsen Windcarrier International Ltd.
5.3	Geosea NV (DEME Group), Oceaneering International, Inc. and Crowley Maritime Corp.
5.4	Gladding-Hearn Shipbuilding
5.5	Waterson Terminal Services, LLC, Port of Providence
5.6	Quonset Development Corporation
6	Onshore works
6.1	Lawrence-Lynch Corp.





[The following text is redacted and has been replaced by a solid black block.]







111 Borchert Park Drive  
P.O. Box 589  
Monroe, MI 48161  
Ph: (734) 682-4001  
Fax: (734) 682-4004  
[www.ventower.com](http://www.ventower.com)

Morten Hjortkjær  
Vice President, CPO  
Copenhagen Offshore Partners A/S  
Vineyard Wind  
Langelinie Allé 43  
DK-2100 Copenhagen Ø

By: Email

November 30, 2017

RE: Support for the Vineyard Wind development of offshore wind in Massachusetts

Dear Mr. Hjortkjær,

Ventower Industries is pleased to submit this letter of support for Vineyard Wind's project plan of offshore wind development off of the coast of Massachusetts.

Our company has been engaged with Vineyard Wind on this project since May of 2016. Ventower saw then and still sees the Vineyard Wind venture as a very sound collaboration of companies with an extensive wind energy (particularly offshore wind) development pedigree. The team clearly has understood the Commonwealth's opportunity to successfully advance the offshore wind industry.

In particular, we are very impressed with the company's commitment to the further development of local supply chain. Additionally, as we have discussed procurement strategies and the timeline with Vineyard Wind, we feel strongly about the proposed

plan being achievable. Ventower Industries can and would be capable of delivering the required steel products for this opportunity.

As an order is secured, our company is willing to engage and support Vineyard Wind in their efforts to create local economic benefits. By establishing a manufacturing facility in the Commonwealth, we would create long-term and good paying manufacturing jobs. Our planned headcount at full production would be approximately 150 - 200 jobs. We also feel strongly about at that time working with other local companies in order to identify products or services that could be provided to our company.

Additionally, an investment of roughly \$40M - \$50M would be spent on a new fabrication facility, equipment, infrastructure and employees recruitment/training. This steel manufacturing plant would be focused on large steel components for offshore wind turbines & foundations.

Ventower Industries is very excited about Vineyard Wind's efforts to bring clean, offshore wind generated power to the state of Massachusetts. It is a very exciting time for our industry and we look forward to participating. Please do not hesitate to contact me with any questions and concerns as your bidding efforts press forward.

Respectfully,

Scott J. Viciano  
Vice President  
757-477-8103  
[sviciano@ventower.com](mailto:sviciano@ventower.com)

**Vineyard Wind**

700 Pleasant St., Suite 510  
New Bedford, MA 02740

Attn.: Morten Hjortkjær

12 December 2017

**Letter of Comfort, Vineyard Wind, Foundations Execution Schedule**

Dear Sir/Madam,

As a supplier of offshore foundations, Bladt Industries A/S hereby confirm our commitment to support Vineyard Wind in creating local economic benefit by exploring and using local supply chain for the offshore foundations for the Vineyard Offshore Wind Farm.

Bladt Industries A/S is a global market leader within manufacturing and supply of offshore wind foundations and one of the most experienced players in the market with production of +1,500 foundations (MP and/or TP solutions) and over 100 serial produced jackets.

Bladt Industries A/S has made a strategic decision to pursue the Vineyard project and the U.S. market in general based on a cooperation with a local partner.

During the last years, we have visited the U.S. a number of times in order to discuss potential cooperation with local partners and various suppliers. We are confident that we can deliver a solution with a partner, which optimises the cost of the foundations, but also secures local content and local job creation.

We currently expect to finalise an agreement with a local partner in Q1-Q2 2018.

Based on the discussions with Morten Hjortkjær, Vice President, Copenhagen Offshore Partners, we expect to receive a contract award by late Q4-18 or in Q1-19 and a Notice to Proceed around November 2019, which allows sufficient time to get a setup in place with a local partner, but also to design, procure, and manufacture the foundations in 2021.

We are confident that the schedule and timeline for the Vineyard Offshore Wind Farm project is realistic. Bladt Industries A/S is, based on our vast experience, willing to support this timeline as it contains some months of contingency compared to conventional schedules, which based on our experience will be sufficient to absorb any first-mover learnings during the Vineyard project.

Bladt Industries A/S has been involved in the U.S. market since the Cape Wind project and developed an execution philosophy for offshore turbine foundations. We have built further on these experiences together with Copenhagen Infrastructure Partners (CIP) to develop a concept for the Vineyard project.

Currently, we are aiming for the below overall process:

- Fabrication of cans in Europe and potentially some in the U.S.
- Procurement of secondary supplies in the U.S. and/or Asian market depending on local possibilities.
- Procurement of electrical and mechanical items in the U.S. or agreement with supplier to establish in the U.S.
- Coating of primary structure and touch up in the U.S.
- Final assembly and outfitting together with local partner in the U.S.
- Load-out to final offshore site.

The above would entail that a very large part of the scope would be performed in the U.S. It is our ambition together with a partner to develop a U.S. based joint venture (J.V.), where Bladt Industries A/S can contribute with knowledge of fabrication in the offshore industry. It is our ambition, over time, to develop together with the partner to ensure more and more local content, in the end to a point, where the J.V. is a fully operational and competitive supplier of foundations capable of doing a full scope in relation to offshore foundations.

We are continuing to investigate the local U.S. supply chain and potential local U.S. partners to support our effort and intent to utilise local labour as much as economically and practically possible. We see the Vineyard project as a great first project to embark on the path set out above.


We are confident that we by this will succeed in bringing our expertise as fast as possible to the local U.S. market without risking the progress and performance of the future offshore wind farms.

We remain at your disposal in case of questions.

Yours faithfully



Jan Kjærsgaard  
CEO, Bladt Industries A/S



Lars Bender  
Vice President,  
Head of Commercial & Sales, Wind & Energy,  
Bladt Industries A/S



## EEW SPECIAL PIPE CONSTRUCTIONS GMBH

EEW SPECIAL PIPE CONSTRUCTIONS GMBH · IM GRÜNEWALD 2 · D-57339 ERNDTEBRÜCK

Copenhagen Offshore Partners A/S  
Langelinie Allé 43  
2100 Copenhagen Ø  
Denmark

Im Grünewald 2  
57339 Erndtebrück, Germany  
Phone +49 2753 609-0  
Fax +49 2753 609-2588  
info@eewspc.de  
www.eewspc.de

## LETTER OF SUPPORT – VINYARD WIND

Ansprechpartner/Contact person	Telefon/Phone	Datum/Date
Andreas Dietze	+49 2753 609-0	01 December 2017

Dear Madam or Sir,

On behalf of EEW SPC I am pleased to provide our support for the Vineyard Wind project in connection with Copenhagen Offshore Partners (COP) bid for the Massachusetts Electric Distribution Companies.

EEW SPC has for more than twelve months been in close dialogue with COP on the Vineyard project both through our US based business development and our Europe based design optimization and knowledge exchange process. Furthermore, EEW SPC has an impeccable track record supplying COP with high quality and on time foundations for offshore wind farms in Europe e.g. Veja Mate.

EEW SPC has been deeply engaged in a design optimization process with COP, where the Monopile design has been optimized for an optimum between manufacturability, design requirements and plate material sourcing. This process still has a huge potential and with the wide experience EEW SPC has as a market leader in Monopile and TP primary steel fabrication, COP and the Vineyard Wind project will benefit even further by continuing the process with EEW as the fabricator of the foundations.

EEW SPC is confirming with this letter that it is capable of delivering the Monopiles against the discussed timeline.

The communicated Vineyard Wind timeline (both Engineering, Procurement and Construction) is realistic as discussed during several meetings in Denmark and in Massachusetts, where EEW SPC recognizes the efforts by Vineyard Wind to promote the opportunities of the offshore wind industry amongst the local supply chain. The early construction in 2021 will benefit from the great momentum that EEW SPC sees in the US market.

EEW SPC believes in the potential of the local supply chain for specific work packages of the TP scope, which could be utilized by the fabricator of the TP's with a supply of primary steel from Rostock.

With an award of a project in Massachusetts, EEW SPC will establish a local branch serving as sales, business development and technical support office for the US offshore wind market and enable knowledge transfer from EEWs global offshore wind experience to the USA.

EEW SPC has global experience in setting up a local fabrication and outfitting for the offshore wind industry, thus we have the right mindset and a developed approach and quality system that we actively would bring into the project and support Vineyard wind to create local economic benefits and are happy to participate in "meet the buyer events" etc.

For the avoidance of doubt, this commitment does not create any legally binding commitment by EEW to carry out any works or reserve capacity, facilities and other resources in this respect.


Rechtsform GmbH, AG Rostock, HRB 9565 · USt.-Id.-Nr. / V.A.T.-No. DE 231629272  
Erfüllungsort und Gerichtsstand: Rostock · Geschäftsführer/Directors: Heiko Mützelburg, Michael Hof, Andreas Dietze

Bank	BLZ / bank code	Konto / account no.	Swift	IBAN
Sparkasse Wittgenstein	460 534 80	35 469	WELADED1BEB	DE 59 4605 3480 0000 0354 69
Ostseesparkasse Rostock	130 500 00	200 000 110	NOLADE21ROS	DE 53 1305 0000 0200 0001 10
Deutsche Bank Rostock	130 700 00	2 066 355	DEUTDEBR	DE 79 1307 0000 0206 6355 00
Commerzbank Siegen	460 800 10	400 531 400	DRESDEFF460	DE 44 4608 0010 0400 5314 00
HSBC Trinkhaus & Burkhardt AG	300 308 80	370 093 008	TUBDDEDD	DE 35 3003 0880 0370 0930 08
UniCredit Bank - HypoVereinsbank	370 200 90	24 258 041	HYVEDEMM429	DE 57 3702 0090 0024 2580 41

EEW SPC looks forward to COPs success in the upcoming auction, and our future collaboration in supporting the Commonwealth of Massachusetts' ambitious offshore wind targets.

With kind regards,

**EEW Special Pipe Constructions GmbH**



Andreas Dietze

- CTO/Managing Director -



Vineyard Wind  
700 Pleasant St., Suite 510  
New Bedford, MA 02740

Arendonk, 15 December 2017

To whom it may concern

Re.: Smulders Group business development concept for offshore wind in  
Massachusetts/USA

SMULDERS has been involved in the Vineyard project from an early stage in Q4 2016 to examine how the project can be supported by transferring the knowledge from our European supply chain to our future business in the USA, especially to Massachusetts. We have not limited ourselves to the supply chain and possible subcontractors since we believe that it is also essential to work together with universities and business networks to reduce the learning curve for the offshore wind business. We believe that transfer of our knowledge gives us the best opportunity in Massachusetts to develop a good business together with our future partners.

We have had several meetings with both the Management of the Vineyard Project and the Management of CIP. However Smulders has not only limited the discussion to management level, we have met several times with the engineers and the project management to discuss the possibilities of local content in Massachusetts and the USA. Our last meeting was on 8 December in Boston to share information about possible final assembly locations. We have agreed on follow-ups in January 2018. Therefore SMULDERS has carried out a tour together with Massachusetts Clean Energy Centre in preselected port areas. We believe there are good locations available which could support the project if there is not enough space in the base harbour New Bedford to execute the required works. The cost impact must obviously be taken into account and depends also on the project pipeline in Massachusetts and the east coast of the USA.

We have at all times taken the timeline of the Vineyard project into consideration. We have built more than 1700 foundations and 20 substations over the past 15 years. The timeline for the Vineyard project has been reviewed by SMULDERS and is realistic. Vineyard has planned to announce an early works agreement for the engineering of the substation in Q2 next year to secure the timeline. Together with our support in the engineering for the transition pieces, especially the secondary steel, we can guarantee the planning for engineering, procurement and construction.

### Foundations:

SMULDERS can deliver the transition pieces and the substation within the requested timeframe.

The construction of the Vineyard project early 2021 would be a good starting point for our future business in USA. If we can secure an order from Vineyard, we can start the recruitment process in due time to find the right persons to manage the final assembly. The greatest advantage would be that we have time to organize training for our employees to reduce the learning curve to a minimum. We would also organize trainings for the employees of our subcontractors, for example our secondary steel suppliers. Our business in the UK proves that these are not only empty words. In Newcastle we have built a final assembly site for jackets from scratch which now employs about 450 people. The number of employees will depend on the foundation type and the estimated number of employees will be fewer for transition pieces. Furthermore investment costs must be taken into account.

In our opinion, a final assembly site for transition pieces with a backup solution in our fabrication facilities in Europe especially in Hoboken is a good starting point. We have had meetings with potential secondary steel suppliers for example Masstank and Boston Bridge. We have also had discussions on developing another production facility together with a potential partner. Therefore we are currently in discussion with Ventower as well.

### Electrical Service Platform/Offshore Substation:

The first substation is planned to be built in our facilities in Belgium and the Netherlands to reduce the risk for the Vineyard project. For the engineering and procurement of the substation we are working together with Iv-Oil and Gas. For the procurement of the Low Voltage and Auxiliary equipment, Iv is currently talking to multiple companies within the USA for pricing and equipment information. All tagged equipment could in principle be purchased locally, but we have to take into account that prices are generally higher in the USA and transportation time will have to be taken into account. The optimal solution with regard to pricing, planning and US requirements per item can be engineered during the early works period.

Iv also has a design office in Houston, which is currently involved for information purposes in the tender process. This design office is aware of all standards within the USA and can assist in the engineering process to make sure all aspects are in line with the design codes and standards applicable.

Currently we have identified New Bedford as a port that can handle a substation weight of approx. 2500 t. The risk to block too much space which is needed for the offshore installation of the Vineyard project however is high and therefore we will continue to look for a future final assembly location both for the substation and the jacket.



Potential local expenditure:

A combination of the final assembly of transition pieces with the final assembly of the substation jacket will give the best synergy effects when it comes to e.g. mobile cranes, crawler cranes, scaffold towers etc.

As for a first rough estimate, app. 90.000 hours could be taken into consideration for the final assembly of the transition pieces, including the prefabrication of the secondary steel like boat landing, platforms etc., and representing app. 1.700 t.

For the final assembly of the substation jacket, app. 15.000 hours are potentially to be performed locally.

The fabrication process of serial offshore foundations and offshore substations requires special skills and attitudes, not only for the labour force of the company, but for management as well. The development of these skills is required to increase productivity compared with the traditional construction of for the oil & gas, shipbuilding and civil steel industry.

- Training facilities and possibilities can be organised for the extra personnel required at SMULDERS existing facilities. Industrial building requires permanent evaluation of the internal processes. This practice and lessons learned from earlier offshore jacket and transition piece foundations projects will be shared with the additional workforce.
- Local workforce will be coached and guided by experienced colleagues having the know-how from earlier projects. Focus will be on the automotive philosophy required to industrialise the construction of offshore jacket foundations.

As stated before SMULDERS is currently identifying local community suppliers who can participate in the local supply chain. Intense discussions on scope identification, product specifications, quality issues and health and safety behaviour, delivery times, labour participation and pricing are ongoing.

It should be noted that all these actions are permanently weighted with the traditional in-house fabrication of jackets, transition pieces and substations, and with the data and parameters obtained during the construction of offshore foundations and substations in the past at SMULDERS. The aim of servicing our clients includes best pricing and maintaining safe, high quality and calculable risk manufacturing.

During the past few years SMULDERS has built many foundations for offshore wind turbine generators as well as substations. Several new techniques, stretching from engineering over supply chain and installation have been developed. SMULDERS is keen to bring these new developments to maturity and apply them where possible.

- Integrated engineering: Smulders strongly believes in an integrated engineering for offshore foundation and substation fabrication: engineering and design must consider the supply chain, pre-assembly and assembly methods as well as installation schemes. This innovative process will have its immediate effect on the costing. We are working closely together with the Vineyard project on this.
- Innovative use of materials: over the recent years, new materials or the alternative use of existing materials have been developed. To use these new applications, it is required to already consider them in the engineering phase. A double innovation can be achieved: in engineering and in application, especially to adopt the requirements to the local market.

- SMULDERS participates in several "Joint Industry Projects" (JIP's) aiming at technological innovation in the offshore wind industry or is a member of professional organisations having access to the results of these groups. Mostly, it concerns research and development (R&D) projects initiated by universities or technical institutions. We are currently looking into a possible membership of the University Tufts School of Engineering. Therefore, we had a first meeting in Boston with a few leading professors and follow-up meetings have been agreed as well.

In conclusion, it can be stated that SMULDERS is willing to engage and support Vineyard Wind in their efforts to create local economic benefits. We strongly believe that a market in the USA can only be successful in the future with a fully developed local supply chain. We are happy to promote this and to provide the required backup from our existing European production facilities.

We gladly refer to our ongoing projects in Newcastle / UK where a successful combination is established between local UK activities – fabrication of lower jacket parts and final mating with the upper jacket parts – and activities from our existing SMULDERS facilities in Belgium – delivery of the painted upper jacket parts.

This combination reduces the risk of failure, secures a gradual offshore wind introduction for local subcontractors and provides Vineyard Wind with the right comfort. We are happy to participate in the "meet the buyer events" and look forward to the Vineyard project becoming the starting point of our offshore USA wind business in Massachusetts.

Sincerely Yours,



Wim Vaes  
Deputy Commercial Director

Dirk Kassen  
Business Development Manager







RE: MA RFP 83C – Vineyard Wind

November 30, 2017

To whom it may concern:

Cianbro has been pursuing the engineering and construction of the offshore substations (OSS) for offshore wind projects in the US since 2012. Our team was greatly encouraged when a company of the stature and experience of Copenhagen Offshore / Vineyard Wind entered the US market in general and the MA RFP in particular.

Vineyard wind approached us as they reached out to quality companies capable of providing this aspect of the project. In the case of Cianbro, they recognize and value that we are the only company with the attributes required and who also has a long history of large projects in MA, and owns and operates a fabrication and coating facility in MA.

We were also encouraged by the Vineyard Wind timeline, and the immediacy of the effort they will require as it will truly start of supply chain for the industry. The timeline proposed we believe to be very achievable and fits our capabilities well.

Our selection to provide the OSS for the Vineyard Wind project would result in 1/4 million work hours being expended in New England, a significant portion of which would be in MA.

We believe this project to be critical to starting the offshore wind supply chain, the creation of which will likely lead to other OSS opportunities down the eastern seaboard in years to come. It is likely that this effort will not only sustain our current operations, but also increase our staff and facilities in the region, and that of our suppliers.

Cianbro is long standing community member with ties to many local suppliers and subcontractors. We look forward to supporting Vineyard Wind in their outreach efforts and to maximize the local economic benefits that this project can provide to the region.

Thank you,

**Parker Hadlock**

General Manager – Wind Energy Services

CIANBRO CORPORATION  
360 US RT 1  
Falmouth ME

[\(207\) 838-8162](tel:(207)838-8162)

[www.cianbro.com](http://www.cianbro.com)

Vineyard Wind  
700 Pleasant St., Suite 510  
New Bedford, MA 02740

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Sincerely Yours,

  
Wim Vaes  
Deputy Commercial Director

Dirk Kassen  
Business Development Manager



December 6, 2017

Attention:  
Mr. Erich Stephens  
Vineyard Wind, LLC  
700 Pleasant Street, 5th Floor  
New Bedford, MA 02740

**RE: Wind Energy Project, Offshore Massachusetts, Lease Area OCS-A 0501  
In Response to Section 83C of an Act to Promote Energy Diversity**

Dear Erich,

Siemens Industry, Inc. ("Siemens") is pleased to provide this letter of support for the subject offshore wind energy project. We have engaged with the Vineyard Wind, LLC ("Vineyard") team, reviewed the project plan, and we believe that the project, as presented to us, is realistic and achievable.

In response to requests from Vineyard to provide onshore and offshore grid access solutions for this project, Siemens has submitted proposals (that include timelines and budgetary estimates). Siemens understands that Vineyard is interested developing initiatives to maximize local economic benefits. Accordingly, one of our proposals to Vineyard included the Siemens Offshore Transformer Module (OTM®), given its ability to maximize local manufacturing. We have identified multiple potential fabricators in Massachusetts for the OTM® and we are willing to continue to engage and support Vineyard efforts to develop a local supply chain. We look forward to working with Vineyard on a mutually agreeable commercial basis.

Siemens Industry, Inc is a U.S. subsidiary of Siemens AG, a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for nearly 170 years. With approximately 372,000 employees in 190 countries, Siemens reported worldwide revenue of \$92.0 billion in fiscal 2017.

Siemens has been in the U.S. for more than 160 years and it is now the company's largest market. Siemens in the USA reported revenue of \$23.3 billion, including \$5.0 billion in exports, and employs approximately 50,000 people throughout all 50 states and Puerto Rico. In just the past 15 years, Siemens has invested approximately \$40 billion in America. Siemens is home to more than 60 manufacturing sites in the U.S. The company invests more than \$1 billion in R&D annually and more than \$50 million in job training programs. For Siemens, the U.S. is also an extremely vital production location, one of the most important research centers, and a key base from which Siemens exports globally.

Siemens Industry, Inc.  
Energy Management Division,  
Power Transmission Solutions

4601 Six Forks Road, Suite 500  
Raleigh, NC 27609  
USA

Siemens Energy Management helps to manage the power chain from creation to consumption, providing technologies for the economic, reliable and intelligent transmission and distribution of electrical power.

You may disclose this letter in connection with your response to the RFP. Please feel free to contact me if you have any questions.

Sincerely yours,

A handwritten signature in blue ink that reads "Kevin Pearce". The signature is written in a cursive, flowing style.

Kevin Pearce  
Business Development Manager, Grid Access  
**Siemens Industry, Inc.**  
Phone: +1 919-703-9488  
E-mail: kevin.pearce@siemens.com

December 6, 2017

Mr. Jack Arruda  
Vineyard Wind LLC  
700 Pleasant Street, Suite 510  
New Bedford, MA 02740

Re: BOEM Offshore Wind Project

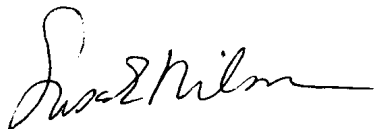
Dear Mr. Arruda:

CLE Engineering, Inc. is pleased to submit this letter of support for Vineyard Wind LLC and their response to the RFP issued by Eversource, National Grid and Unitil for the construction of at least 400 megawatts of capacity. We understand that Vineyard Wind is seeking to develop their 2012 offshore wind lease area in partnership with Copenhagen Infrastructure Partners and Avangrid Renewables.

As a local firm, we are appreciative of the opportunity to join Vineyard Wind's team and provide engineering services and continue supporting the development of offshore wind activities in Massachusetts. CLE's feasibility study for a proposed Operations and Maintenance facility to support Vineyard Wind's offshore wind operations will serve as the base for advancing this aspect of the project. We look forward to providing engineering services when Vineyard Wind develops their lease area.

We also look forward to Vineyard Wind's selection as a developer for this project as this will enable their use of the Marine Commerce Terminal in New Bedford. CLE was the structural engineer for this facility, which is designed to support the construction, assembly and deployment of offshore wind projects and we are excited to see the terminal fully utilized. We are confident that wind energy development along our Massachusetts coastline will continue to provide engineering opportunities for CLE and create jobs throughout the region.

Respectfully submitted,  
CLE Engineering, Inc.



Susan E. Nilson, P.E.  
President



Carlos G. Peña, P.E.  
Vice President



BARRY J. REED, P.E.  
ADAM C. ROGGE, P.E.  
GLENN M. BAUDOIN  
PATRICK M. LYLES  
M. WESLEY SALMON  
DAVID G. LAURENT, P.E.  
DANIEL S. CANTRELL, P.E.

BENJAMIN G. FOLEY, P.E.  
GENERAL MANAGER

November 27, 2017

MA Department of Energy Resources  
Evaluation Committee  
Re: RFP 83C Letter of Support for Vineyard Wind

To Whom It May Concern:

Keystone Engineering Inc. is pleased to submit a letter of support on behalf of Vineyard Wind's proposed offshore wind farm development.

Keystone is an active player in the US offshore wind industry. We have provided substantial engineering services for five (5) of the advanced-stage US offshore wind farms to-date, including Cape Wind, Dominion VOWTAP, Fishermen's Energy Atlantic City Wind Farm, and the Block Island Wind Farm.


We can attest first-hand to the impact of just one offshore wind project. Keystone's dedicated Offshore Renewables group has, at its peak, grown to employ nearly 30 full-time employees to support offshore wind projects. We have since invested significantly as a company in developing technologies, skills, and highly-trained employees to support the industry.

Over the course of 2017, we have had several meetings and conversations with the Vineyard Wind team, both with their local project execution team in New Bedford as well as the project owners and company directors in Copenhagen. We have the utmost confidence in this project and its capability to create long-term jobs and support new offshore industries in Massachusetts. We believe that the team's commissioning target of 2021 is technically realistic and achievable, and that locally-based companies can play a major role in delivering this project.


To this end, Keystone Engineering has expressed our willingness to invest in local office space to support the Vineyard Wind project and expand the local economic benefits. We furthermore believe that there is significant potential for New Bedford to be a hub for future installation contractors, port operators, a staging base for transportation and installation, and a regional hub for offshore operations and maintenance.

Our relationship with Vineyard Wind has indicated that they are steadfast and committed to becoming a leading player in the US offshore wind industry, and are focused on supporting the development of a local supply chain and economic growth. Keystone is committed to working with Vineyard Wind and engaging our contacts in the industry to help achieve these goals.

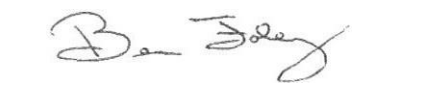
Sincerely,



Barry Reed, PE  
Chief Executive Officer



Adam Rogge, PE, PMP  
Chief Operations Officer



Ben Foley, PE, PMP, P.Eng  
General Manager





November 22, 2017

Mr. Henrik Fomsgaard Lynderup  
Senior Consultant, Offshore Technology & Innovation  
Blue Power Partners  
Langerak 17  
9220 Aalborg Ø  
Denmark

**RE: Jones Act Compliant Offshore Wind Turbine Installation Liftboat JG6000P**

Dear Mr. Lynderup,

We refer to the various meetings we have had at your office with yourself and Messrs. Jack Arruda, and Rasmus Miller in New Bedford, MA, wherein we presented our design for a Jones Act Compliant Wind Turbine Installation Vessel (WTIV). We thank you for the opportunity to present our proposal and appreciate the efforts by Vineyard Wind to source the vessel and services locally in the USA. This project will provide many opportunities to strengthen the local supply chain which will be a boost for the local economy.

Our proposed vessel, the JG6000P, is designed specifically for use off the Northeast Coast of the United States, with particular attention being paid to the access restrictions at the New Bedford harbor. It is important to consider that port since it is one of the few staging ports in the area where this vessel can jack-up, thereby eliminating the need for a shore based crane.

The size of the vessel also takes into consideration the port's maneuvering restrictions. There are larger vessels in the series, but this is the one that optimizes the requirements and limitations of the New Bedford facility. Should you wish, other designs for larger vessels could be considered subject to port access limitations especially those of the New Bedford staging area.

The vessel will be built in the U.S., and will be operated by one of the largest, if not the largest, liftboat operating company in the country. The vessel will be built in one of the major Gulf Coast yards experienced in building liftboats. This will ensure a sound and timely construction of the vessel. Recognizing our joint desire to maximize utilization of the local supply chain, our aim will be to seek talent or develop it locally over the life of the project.

We have reviewed the Vineyard Wind timeline (40 months to build the JG6000P once the requirements are finalized and commitments in place, based on the current workload) and are satisfied it can be met. We feel that the All Coast, Suda team with the active support of Siemens in terms of timely delivery of equipment, is the best team that can be put together in the U.S. Suda has designed some of the most well-known liftboats including the world's four largest liftboats. He is generally accepted as a leading authority in this field.



Various divisions of Siemens are supporting us on this project and are also vetting some critical aspects of the installation vessel design. We also have a Confidentiality Agreement in place with Siemens and the turbine dimensions used in the layout are accurate. The electric jacking system on this vessel will be using Siemens components including the VFD's, Motors, gearboxes, PLC's, automation and power management systems.

We have presented you a tentative building schedule that shows that the vessel can be built and ready for deployment in a timely manner. For this to happen, we are requesting support from Vineyard Wind. A lot of engineering has been done to establish feasibility. Funding will require commitment, albeit qualified, from potential EPCI contractors. Per our research, our vessel will be cost competitive to work outside the U.S. This will be one of the very few vessels in this size range to be able to carry the modern 6, 8, or even 10 MW turbines. It can also be geared to carry monopiles (or jackets) as the attached presentation shows. We request that consideration be given to this important fact in providing a commitment.

Next steps will be the following:

- a. Liaising with Pilots' Association to help finalize the dimensions of the vessel, if needed.
- b. Model testing or equal of the selected vessel to obtain the expected speed and maneuvering.
- c. Obtain main scantling approval from ABS. A letter will be provided.
- d. Obtain a contract price of the vessel from a reliable shipyard.
- e. Complete all financing arrangements and charter terms in order to enable final shipyard construction contract.

Most of these items are on the critical path. The model testing requirement, for example, is necessary to convince the Pilot's Association, USCG and USACE of the suitability of the vessel for the New Bedford facility. Suda has been in touch with them and has provided them preliminary results based on simple theoretical analysis. Incidentally, the Suda analysis shows that the JG6000P will be able to transit the locks over 90% of the time when the winds are within the stipulated maximum transit winds of 20 knots. Suda has discussed with ABS preapprovals of main steel. This will help us to locate locally available steel. Items (c) & (d), being on the critical path, are self-explanatory. We can discuss reasonable modifications to the abovementioned schedule if needed.

As the turbine sizes that are being considered for the US Offshore are 7MW or larger and as there is no viable alternative to install these turbines other than a purpose-built Jones Act Installation Vessel, there is a significant advantage in building this vessel ahead of the pipeline of projects currently planned. This will drive first mover benefits and better planning and scheduling for other projects being bid or that have been awarded locally. The other key benefit is the vessel can be shared with other partners who have either won or are bidding Offshore Wind projects in USA.





As stated earlier, our aim is to utilize the New Bedford port. The economic benefits of utilizing local resources in terms of stevedoring, vessel handling, and victualling, to name a few, are definite though not quantifiable at this stage. The All Coast team is committed to supporting Vineyard Wind's desire to utilize local talent.

We look forward to working with you on this project.

Best Regards,

A handwritten signature in blue ink, appearing to read "John Nesser", with a stylized flourish at the end.

**John Nesser**  
Co-CEO and Manager  
All Coast LLC

**Vineyard Wind LLC**

700 Pleasant St., Suite 510

New Bedford, MA 02740

Attn.: Morten Hjortkjær

Your Ref.:  
Morten HjortkjærOur Ref.:  
FOWIC/COMM/2017/CTDate:  
08.12 2017**Vineyard Wind – Support Letter**

Dear Morten,

Fred. Olsen Windcarrier is delighted to be considered as a suitable contractor for your Vineyard Wind project of the coast of Massachusetts in North America. Fred. Olsen Windcarrier remains fully committed to supporting the emerging offshore wind market in North America and to support Vineyard Wind materializing the Massachusetts offshore pipeline.

Vineyard Wind and Fred. Olsen Windcarrier have been engaged in mutual discussions around the Massachusetts pipeline since early 2017 and Fred Olsen Windcarrier have submitted a proposal for the installation scope for Vineyard Wind. Fred. Olsen Windcarrier highly appreciate the professionalism and strong experience within offshore wind delivered by Vineyard Wind and Fred. Olsen Windcarrier will continue supporting Vineyard Wind as the North American projects develop and materialize. Furthermore, Fred. Olsen Windcarrier fully appreciate and recognize the efforts taken by Vineyard Wind to build and optimize a local US supply chain for offshore wind in Massachusetts.

The management team at Vineyard Wind carries many years of management experience within developing and operating offshore wind farms, which is showcased by the robust timeline laid out for the Vineyard Wind project. Fred. Olsen Windcarrier has evaluated the timeline from engineering, planning, construction and into operations and Fred. Olsen Windcarrier is confident the timeline is achievable and realistic which consequently has led to Fred. Olsen Windcarrier committing to deliver our services against this timeline.

Planning construction start in early 2021 for Vineyard Wind is realistic and achievable for the project and Fred. Olsen Windcarrier recognizes that constructing the Vineyard Wind project by 2021 is an optimal route to secure a local supply chain and competence build up within offshore wind locally in Massachusetts.

**Local Supply Chain Commitment**

Fred. Olsen Windcarrier and its related companies (for example Global Wind Service) are committed to the development, continuous support and sustainability of local supply chains. Where possible and

---

**Fred. Olsen Windcarrier International Ltd**Company No: C 58470  
VAT No: MT 2107 3301Block A/7 Skyway Offices  
177 Marina Street  
Pieta, PTA 9042  
MaltaPh: + 356 2092 7020  
Fax: + 356 2092 7001**Oslo Office**c/o Fred. Olsen Windcarrier AS:  
Fred. Olsens gate 2  
N-0152 Oslo  
NorwayPh: + 47 22341000  
Fax: + 47 22412415 +  
47 22341182



economically viable to do so, Fred. Olsen Windcarrier will endeavor to source and procure local labor, supplies and materials in order to maximise the potential of and contribution to the community local to the project in question. Fred Olsen Windcarrier is considering to setup a US office to support all the east coast projects, but the final decision, the timing and the choice of office location etc. is dependent on the rapidness, location and scale of the offshore wind development.

Fred. Olsen Windcarrier, as part of the Fred. Olsen Group of related companies, remain dedicated to the principle of maximizing the potential of local based companies and employees throughout the duration of any given contract within Massachusetts territory.

Being part of the Fred. Olsen Group of companies, the company has a proud 160 years of commercial operations originating in the shipping industry and also with substantial business activities in North America. The Fred. Olsen Group for example owns and operates the Timex Group, a watch manufacturer in Connecticut. Furthermore during 2<sup>nd</sup> World War Fred. Olsen made their fleet of commercial vessels available to the allies moving war material to and from Europe. Hence Fred. Olsen is well recognized in North America, which we trust Vineyard Wind will also appreciate.

## **Overview of Economic Impacts to Massachusetts**

### **Potential Economic Impact**

A positive impact on the local economy can potentially be achieved in the following areas:

- Income Tax contribution from local installation vessel and technicians
- Local US Supplier (Fabrication of installation equipment and tools etc.)
- Setting up a local Fred. Olsen Windcarrier US office
- Rent of Equipment
- Vessel Generated Port Activity
- Shore Based Staff
- Offshore technicians
- Training Courses
- PPE, Equipment and Vehicles

As mentioned earlier Fred. Olsen Windcarrier is committed to utilize and build the local supply chain in North America.

Looking at the specific project execution plan for Vineyard Wind, Fred. Olsen Windcarrier has tried to estimate the number of headcounts related to building 400MW offshore wind out of Massachusetts.

### **Assumptions:**

- Installation will commence August 1<sup>st</sup> 2021 and be finalized Mid December 2021 (P90 weather).
- If Vineyard Wind decide to install 800MW the numbers shown on the next page in the orange box will be duplicated another 5 months during 2022. It is assumed back office etc. remain the same for 800MW.
- Assumed that the crew onboard the installation vessel coming from Europe are all non-US citizens as this vessel will not berth US harbours. Crew change however will drive business activity onshore.
- Crew to operate 4 feeders are assumed to be 10 and 6 FTE's per feeder, however this is an estimate only and it cannot be guaranteed that all will be US citizens. Crew for tugboats and anchor handling are included in the numbers, hence a very conservative estimate.



## Expected FTE's for 400MW Vineyard Wind for 2021 installation

Year Month		2019												2020												2021												2022															
		1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#	1	2	3	4	5	6	7	8	9	#	#	#				
Admin*				2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Operations**										1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
HSEQ																			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Project Management										1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b><u>Tower and Nacelle:</u></b>																																																					
Liftboat 1 Crew																																																					
Liftboat 1 Installation																																																					
Liftboat 2 Crew																																																					
Liftboat 2 Installation																																																					
<b><u>Blades:</u></b>																																																					
Liftboat 1 Crew																																																					
Liftboat 1 Installation																																																					
Liftboat 2 Crew																																																					
Liftboat 2 Installation																																																					
Jack up vessel Installation***																																																					
Total		0	0	2	2	2	2	2	3	5	5	5	5	5	5	5	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9		

\* MD/sales  
Office Ass.  
Legal  
Procurement

\*\* Ops manager  
Ops manager Ass  
Doc control and planner

\*\*\* 1 OCM per shift  
1 Lift supervisor per shift  
9 Offshore techn per shift

it will be the basic assumption to source locally in Massachusetts where possible and economically viable to do so, hence Vineyard Wind can assume that Fred. Olsen Windcarrier will do our utmost to support building local content in Massachusetts. Fred. Olsen Windcarrier is currently in dialogue with potential local US partners and we will continue engaging the US supply chain as the offshore wind projects materialize.

Having installed the first 5 offshore wind turbines on Block Island Fred. Olsen Windcarrier has already developed a portfolio of local partners and been in close contact with the US authorities on matters related to operating a vessel spread in connection with construction of offshore wind. Fred Olsen Windcarrier is furthermore more than willing to participate in for example "meet the buyer events" hosted by Vineyard Wind. All in all, the Vineyard Wind project will be a very good opportunity for Fred. Olsen Windcarrier to leverage our experience and learnings from Block Island Offshore Wind Farm and to further support the Vineyard Wind team and the development of the US offshore wind industry.

Yours sincerely,

Casper Toft  
Chief Commercial Officer  
From and on behalf of,  
Fred. Olsen Windcarrier International Ltd.



Lars Thaaning Pedersen  
Copenhagen Offshore Partners Inc  
177 Huntington Avenue, 17th floor  
Boston, MA 02115

## Vineyard Wind - Joint Letter of Support

Dear Mr. Lars Thaaning Pedersen

On behalf of GeoSea, Oceaneering International, Inc. & Crowley Marine Solutions, we are pleased to provide this Letter of Support to Vineyard Wind, LLC ("VYW") in connection with VYW's bid submission to the Massachusetts Electric Distribution Companies for the construction and operation of an offshore wind farm near Martha's Vineyard.

We intend to use our combined strengths to offer a viable Jones Act compliant installation solution for offshore wind development in Massachusetts, and we are making progress toward this end. Our discussions are made easier by virtue shared values including health and safety, delivering projects on schedule, and using local content.

We understand the importance of fostering economic growth and local job creation in Massachusetts and support the intention to build a Massachusetts-based supply chain serving the offshore wind industry. Should the Parties be awarded an installation contract for VYW's project, we support using the New Bedford Marine Terminal as an operational base.

Offshore wind should be a significant part of Massachusetts' future as a leader in clean energy. We present the best combination of European installation expertise with U.S. subsea services and maritime transportation providers. We are eager to serve the offshore wind industry in Massachusetts and applaud your continued pursuit of projects there. We hope you find our letter encouraging.

Sincerely,

**GeoSea NV**  
Jan Klaassen  
Business Unit Manager  
Offshore Renewables

**Oceaneering International Inc**  
Nathaniel Spencer  
Corporate Development Manager

**Crowley Marine Solutions Inc**  
Bruce Harland  
Vice-President  
Business Development

**GLADDING-HEARN**  
**SHIPBUILDING**

December 9, 2017

Jack Arruda  
Vineyard Wind LLC.  
700 Pleasant St. Suite 510  
New Bedford, MA 02740

Subject: Crew Transfer Vessels

Dear Jack:

Thanks for taking the time to come visit us in September to discuss the Vineyard Wind project. We are excited to see another effort to bring offshore wind to Massachusetts. We were very disappointed when the Cape Wind project did not come to fruition as we had a significant investment in developing designs and proposals for prospective service vessel operators. As we discussed, we've partnered with Incat Crowther to design Crew Transfer Vessels specifically to meet USCG regulations for operation in US waters. We've built more than 40 high speed catamaran ferries to Incat Crowther designs and hope to build on their success at designing CTV's currently operating in Europe. Enclosed is a description of some of the CTV's they've designed. We've recently been in contact with several local operators expressing interest in our CTV designs that meet your outline specifications.

We feel our location and the combined experience of our team make us uniquely qualified to provide CTV's for the Vineyard Wind project. With more than 125 highly skilled full-time employees at Gladding-Hearn and 500 active New England suppliers, we are ready to build and support the Vineyard Wind's CTV's throughout their service life.

Sincerely,



Peter J. Duclos

President

Dir. of Business Development

Enclosures:

Incat Crowther Wind Farm Support Vessels

**Since 1955**

[www.gladding-hearn.com](http://www.gladding-hearn.com)

Mail: P.O. Box 300, Somerset, MA 02726 • Shipping: 80 Francis Street, Somerset, MA 02725 • USA (GMT-5) • Tel: 508-676-8596

**DESIGNERS • BUILDERS**





# Waterson Terminal Services

PORT OF PROVIDENCE, RHODE ISLAND

November 21, 2017

Jack Arruda, Manager  
Vineyard Wind LLC  
700 Pleasant Street, Suite 510  
New Bedford, MA 02740

Dear Mr. Arruda,

This letter is to express the interest of Waterson Terminal Services (WTS) to provide land and stevedoring services for the Vineyard Wind Project. WTS is the exclusive terminal manager of ProvPort, a 115-acre marine terminal facility located at the convergence of Narragansett Bay and the Providence River, only 2.5-hour transit time from the Brenton Reef Pilot Station (Lat 41-23.4N; Long 071-21.2W). WTS specializes in project cargo, bulk and break bulk, and currently handles [2.5] million tons of cargo annually through the ProvPort facility.

Our amenities include:

- Deep draft of 40' @MLW
- 6 berths (3500 linear feet)
- On-Dock rail operated by Providence and Worcester Railroad
- 25+ acres (non-contiguous) open laydown area adjacent to pier and rail
- Solid fill dock suitable for handling heavy loads
- Highly trained and skilled workforce
- Experienced in handling heavy project cargoes including offshore wind components

It is our understanding that Vineyard Wind may need our services for handling and storing large components, such as turbine blades, in support of construction of the Vineyard Wind project to be located approximately 14 miles south of Martha's Vineyard. We understand that Vineyard Wind will be prepared to enter into detailed discussions in May, 2018, and that construction is planned to start approximately 2-3 years later. Based on current information, WTS anticipates the necessary land area to be available and will guarantee availability provided acceptable business terms are agreed to.

Sincerely,

Christopher Waterson  
General Manager  
Waterson Terminal Services, LLC



December 13, 2017

Jack Arruda, Manager  
Vineyard Wind LLC  
700 Pleasant Street, Suite 510  
New Bedford, MA 02740

Dear Mr. Arruda,

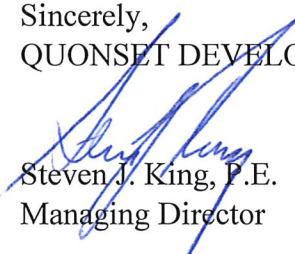
This letter is to express the interest of the Quonset Development Corporation (QDC) in providing port services and storage for the Vineyard Wind Project. On Thursday, December 7, 2017 we had the pleasure to meet with your colleagues, Rasmus Miller and Erich Stephens at our headquarters in North Kingstown, RI. The QDC owns the Port of Davisville, Rhode Island's premiere public port and gateway to markets throughout Southern New England. Strategically located near the mouth of Narragansett Bay, Davisville offers four berths and five terminals with over 60 acres of laydown and terminal storage. Davisville is one of the top auto ports and frozen seafood ports along the East Coast of the United States and is currently investing \$90 million to modernize and expand the capabilities of Pier 2 at the port.

Port facilities include:

- 4,400 linear feet of berthing space
- Two piers (each 1,200 feet in length) and bulkhead
- 32 feet controlling depth, mean low water (MLW)
- On-dock rail and 60 acres of laydown area.
- *No Harbor Maintenance Fee (0.125% ad valorem of cargo)*
- 150 MT Gottwald Mobile Harbor Crane
- Secure access
- No docking delays
- Direct intermodal connections

With the addition of the 150 MT mobile harbor crane, Davisville can handle a wide range of project cargoes and breakbulk materials, including wind turbines and heavy equipment. The Port of Davisville location positions QDC to participate in offshore projects from Cape Cod to New Jersey. We look forward to working with Vineyard Wind to successfully complete your project and bring wind energy to New England.

Sincerely,  
QUONSET DEVELOPMENT CORPORATION

  
Steven J. King, P.E.  
Managing Director





December 11, 2017

Mr. Jack Arruda  
Vineyard Wind  
700 Pleasant Street, Suite #510  
New Bedford, MA 02740

Re: Letter of Support

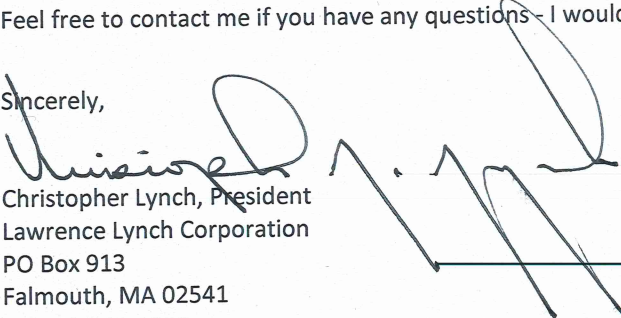
Dear Mr. Arruda,

We have prepared the following letter to show our support of Vineyard Wind OWF.

- Vineyard Wind has requested pricing from Lawrence-Lynch Corp. (LLC) and LLC is happy to state that developing a price proposal for Vineyard Wind was a pleasure. The process of price development involved the refinement of assumptions and optimization of work processes based on information which was improved as the pricing developed.
- LLC believes strongly in the project because as a "local" company, the project would result in the creation of a substantial number of construction jobs.
- LLC believes that the Tax Revenue for the Towns of Yarmouth & Barnstable would be significantly enhanced if the Vineyard Wind OWF project becomes a reality.

Feel free to contact me if you have any questions - I would be happy to further discuss this project.

Sincerely,



Christopher Lynch, President  
Lawrence Lynch Corporation  
PO Box 913  
Falmouth, MA 02541  
PH 508-548-1800  
clynch@lawrencelynch.com

396 Gifford Street, PO Box 913, Falmouth, MA 02541 Phone 508.548.1800 Toll Free in MA 800.352.7188  
Main Fax 508.457.1825 Construction Fax 508.548.6917

[www.lawrencelynch.com](http://www.lawrencelynch.com)

OCS-A  
0501



MASS  
USA

**VINEYARD WIND**

**Vineyard Wind**

**Attachment 14.6-1**

**REDACTED**