

BOEM COMPANY NUMBER 15058

**UNSOLICITED REQUEST FOR AN OUTER  
CONTINENTAL SHELF RENEWABLE  
ENERGY COMMERCIAL LEASE**

**BY**

**Statoil Wind US LLC**



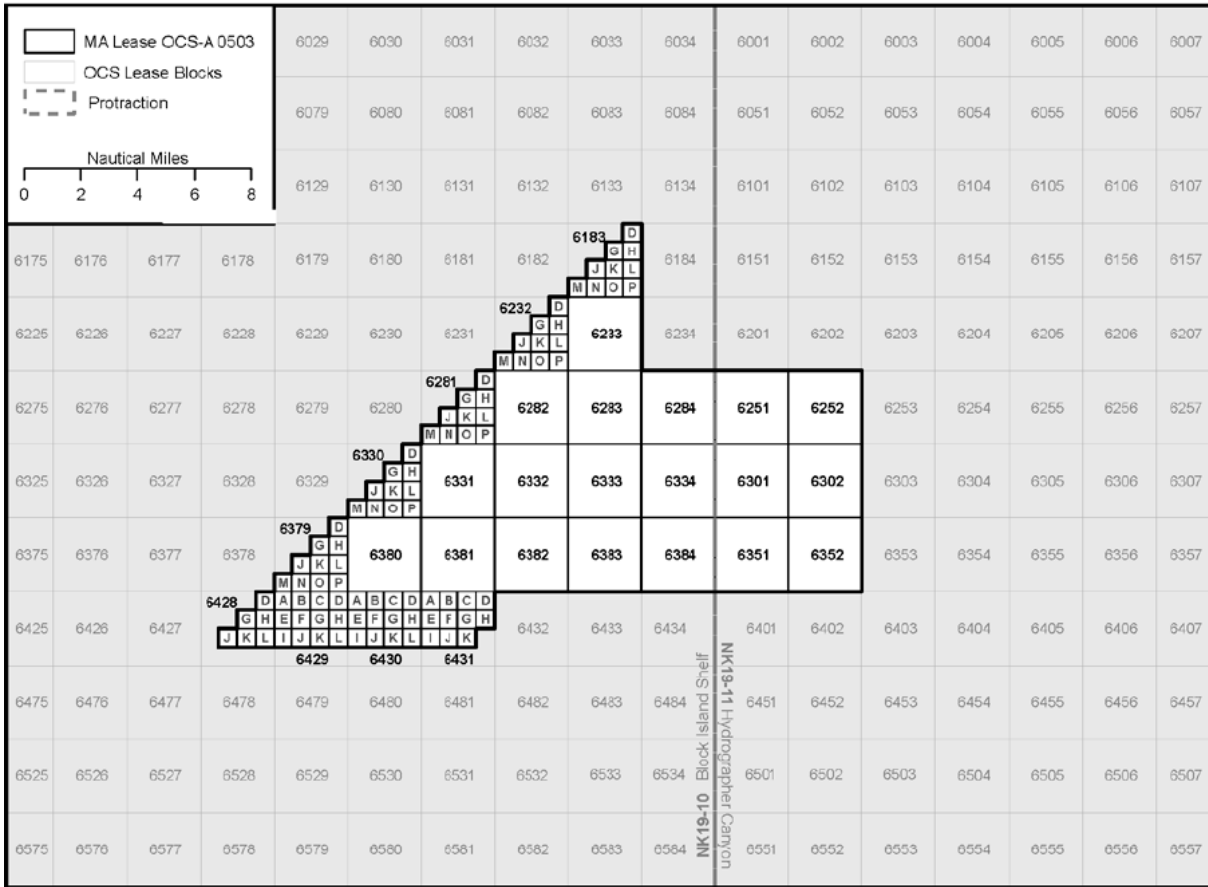
**December 2016**

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Map ID: PACB-2014-1029

Figure 1-2 WEA Previously Identified as OCS-A 0503

Protraction Name	Protraction Number	Block Number	Sub-Block
Providence	NK19-07	7079	P
Providence	NK19-07	7128	P
Providence	NK19-07	7129	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6028	P
Block Island Shelf	NK19-10	6029	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6030	All of Block
Block Island Shelf	NK19-10	6077	P
Block Island Shelf	NK19-10	6078	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6079	All of Block
Block Island Shelf	NK19-10	6080	All of Block
Block Island Shelf	NK19-10	6081	All of Block
Block Island Shelf	NK19-10	6082	All of Block
Block Island Shelf	NK19-10	6126	P
Block Island Shelf	NK19-10	6127	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6128	All of Block
Block Island Shelf	NK19-10	6129	All of Block
Block Island Shelf	NK19-10	6130	All of Block
Block Island Shelf	NK19-10	6131	All of Block
Block Island Shelf	NK19-10	6132	All of Block
Block Island Shelf	NK19-10	6175	P
Block Island Shelf	NK19-10	6176	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6177	All of Block
Block Island Shelf	NK19-10	6178	All of Block
Block Island Shelf	NK19-10	6179	All of Block
Block Island Shelf	NK19-10	6180	All of Block
Block Island Shelf	NK19-10	6181	All of Block
Block Island Shelf	NK19-10	6182	All of Block
Block Island Shelf	NK19-10	6183	All of Block
Block Island Shelf	NK19-10	6224	P
Block Island Shelf	NK19-10	6225	C,D,F,G,H,I,J,K,L,M,N,O,P
Block Island Shelf	NK19-10	6226	All of Block
Block Island Shelf	NK19-10	6227	All of Block
Block Island Shelf	NK19-10	6228	All of Block

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Block Island Shelf	NK19-10	6229	All of Block
Block Island Shelf	NK19-10	6230	All of Block
Block Island Shelf	NK19-10	6231	All of Block
Block Island Shelf	NK19-10	6232	All of Block
Block Island Shelf	NK19-10	6233	All of Block
Block Island Shelf	NK19-10	6275	All of Block
Block Island Shelf	NK19-10	6276	All of Block
Block Island Shelf	NK19-10	6277	All of Block
Block Island Shelf	NK19-10	6278	All of Block
Block Island Shelf	NK19-10	6279	All of Block
Block Island Shelf	NK19-10	6280	All of Block
Block Island Shelf	NK19-10	6281	All of Block
Block Island Shelf	NK19-10	6282	All of Block
Block Island Shelf	NK19-10	6283	All of Block
Block Island Shelf	NK19-10	6284	All of Block
Block Island Shelf	NK19-10	6325	All of Block
Block Island Shelf	NK19-10	6326	All of Block
Block Island Shelf	NK19-10	6327	All of Block
Block Island Shelf	NK19-10	6328	All of Block
Block Island Shelf	NK19-10	6329	All of Block
Block Island Shelf	NK19-10	6330	All of Block
Block Island Shelf	NK19-10	6331	All of Block
Block Island Shelf	NK19-10	6332	All of Block
Block Island Shelf	NK19-10	6333	All of Block
Block Island Shelf	NK19-10	6334	All of Block
Block Island Shelf	NK19-10	6376	All of Block
Block Island Shelf	NK19-10	6377	All of Block
Block Island Shelf	NK19-10	6378	All of Block
Block Island Shelf	NK19-10	6379	All of Block
Block Island Shelf	NK19-10	6380	All of Block
Block Island Shelf	NK19-10	6381	All of Block
Block Island Shelf	NK19-10	6382	All of Block
Block Island Shelf	NK19-10	6383	All of Block
Block Island Shelf	NK19-10	6384	All of Block
Block Island Shelf	NK19-10	6428	A,B,C,D,E,F,G,H,I,J,K,L
Block Island Shelf	NK19-10	6429	A,B,C,D,E,F,G,H,I,J,K,L
Block Island Shelf	NK19-10	6430	A,B,C,D,E,F,G,H,I,J,K,L
Block Island Shelf	NK19-10	6431	A,B,C,D,E,F,G,H,I,J,K,L,M,N,O
Hydrographer Canyon	NK19-11	6251	All of Block
Hydrographer Canyon	NK19-11	6252	All of Block
Hydrographer Canyon	NK19-11	6301	All of Block
Hydrographer Canyon	NK19-11	6302	All of Block
Hydrographer Canyon	NK19-11	6351	All of Block
Hydrographer Canyon	NK19-11	6352	All of Block

Table 1-1 OCS Blocks within the Applied Area

## 2 Objectives and Facilities

Pursuant to 30 C.F.R. § 585.230(b), SWUS submits a general description of its objectives and the facilities that it would use to achieve those objectives.

### 2.1 Objectives

SWUS is interested in developing one or more commercial wind farms in the Available WEA. SWUS, through its parent Statoil ASA and all of its subsidiaries (“Statoil”), envisages that the Available WEA, which spans water depths of around 40 to 60 m, is deemed suitable for developing bottom-fixed offshore wind farms. Possible substructure concepts include, but are not limited to, monopiles, jackets and gravity based designs. Figure 2-1 illustrates different substructure concept for offshore wind and the range of suitable water depths. The final choice of substructure will depend on a number of factors, including water depth, geotechnical conditions, met-ocean conditions and turbine size.

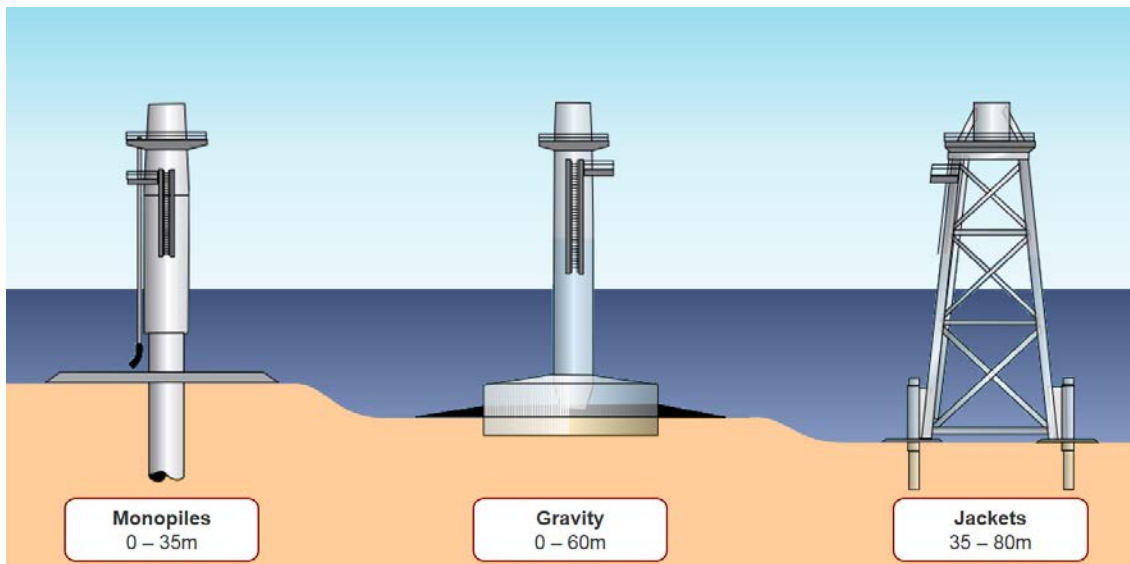


Figure 2-1 Substructure Types and Water Depths

#### 2.1.1 Monopile

The monopile is the most frequently applied support structure concept for offshore wind due to its simple design and ease of installation in shallow to medium water depths. Under the right geotechnical conditions, and based on today’s technology, the monopile concept is the most economically attractive option for water depths up to 40 m.

Statoil has considerable experience with this type of foundation through developing and constructing the Sheringham Shoal and Dudgeon offshore windfarms off the coast of the United Kingdom. Statoil’s experience with offshore wind is described in further detail in section 7.

The monopile support structure is a relatively simple design by which the tower is supported by the monopile, typically through a transition piece. The monopile continues down into the seabed. The structure is made of a cylindrical steel tube. The vertical loads can easily be transferred to the soil through wall friction and tip resistance. The lateral loads, which by

comparison are much larger, are conveyed to the foundation through bending. The loads are subsequently transferred laterally to the soil.

With increased water depth or /and height, the diameter of the monopile foundation has to be large enough to provide sufficient stiffness. This attracts relatively high hydrodynamic loads. Stiffness requirements for increased water depth or height result in such large diameters that it is impossible to fabricate such a structure, due to limitations on the size of the steel plates that can be produced by steel mills. Difficulties due to limited sizes of pile driving equipment may also be expected.

**2.1.2 Jacket**

A jacket structure is made up of three or four legs connected by slender braces, making it a highly transparent structure and one that can be used in a deeper water than a monopile. Statoil has extensive experience with large scale jacket structures in marine environment though its oil and gas business. Block Island, the first commercial offshore wind farm in the United States, used this foundation concept.

Loads are transferred through the members mainly in axial direction. The term ‘jacket’ has its origin in the oil and gas industry and is used to indicate a spaceframe structure which has the piles driven through the pile sleeves at the bottom of each of the legs.

The space frame structure allows for light and efficient construction. However, each of the joints has to be specially fabricated, requiring many man-hours of welding. Furthermore, transportation will be an issue, particularly when installing a large number of turbines.

**2.1.3 Gravity Base Structure**

A Gravity Base Structure (“GBS”) relies on a low center of gravity combined with a large base to resist overturning. As the GBS requires a large mass it is generally made of concrete, as concrete is much cheaper than steel. The GBS is placed directly on the seabed. GBSs come in a number of varieties and shapes depending on the specific site conditions.

**2.2 Wind Farm in Available WEA**

SWUS envisages building one or more bottom fixed wind farms within the Available WEA. The Available WEA spans approximately 388,569 acres (1,572 km<sup>2</sup>), and is located near a population cluster with high demand for energy. This gives a potential for developing multi-gigawatt offshore wind capacity. As a reference, the power density of existing offshore wind farms ranges from 2 to 10 MW/km<sup>2</sup>, with an average of around 6 MW/km<sup>2</sup>, which indicates a gross potential of 3 – 15 GW in the Available WEA.

However, SWUS considers a phased development of the area a more suitable approach, both from a strategic and technical perspective. A phased development will likely better fit available offtake solutions, and be more suitable to local stakeholders. A first phase of approximately 400 to 600MW is considered a suitable and realistic starting point.

A preliminary suggested wind farm parameter envelope is outlined in Table 2-1.

<b><i>The Project</i></b>	
<i>Nameplate Capacity</i>	400 – 600 MW

<i>Total Area</i>	50 – 150 km <sup>2</sup>
<i>Distance to shore</i>	80 – 120 km

**Key Parameters**

<i>Average Wind Speed</i>	9.2 – 9.4 m/s*
<i>Water Depth</i>	40 – 60 m
<i>Distance to shore</i>	80 – 140 km

**Design**

<i>Turbine Rated Power</i>	8 – 12 MW
<i>Turbine Rotor Diameter</i>	150 – 220 m
<i>Hub Height</i>	100 – 135 m
<i>Foundations</i>	Monopiles, Jackets, Gravity Bases Substructures
<i>Export Solution</i>	HVAC or HVDC
<i>Inter Array Voltage</i>	33 – 66 kV

**Table 2-1 Suggested First Wind Farm Build-out Envelope**

\* Source: NREL - Assessment of Offshore Wind Energy Leasing Areas for the BOEM Massachusetts Wind Energy Area

### 3 Available Data and Information

Pursuant to 30 C.F.R. § 585.230(d), SWUS submits the available and pertinent data and information concerning renewable energy resources and environmental conditions in the areas of interest, including energy and resource data and information that SWUS used to evaluate the Available WEA.

SWUS has used publically available GIS data sources for a preliminary assessment of the Available WEA, as well as Statoil’s available in-house data. An overview is given in sections 4.1 to 4.5. Data has been collected from the following data sources:

- Assessment of Offshore Wind Energy Leasing Areas for the BOEM Massachusetts Wind Energy Area
- Internal Statoil GIS database: Covered high level infrastructure, bathymetry and mapping. Some useful environmental data (nature reserve boundaries).
- Internal Statoil technical: High level site technical constraints, wind analysis.
- Northeast Ocean Data: Environmental and socio-economic information
- Authority & Stakeholder feedback: Federal, State and local stakeholder intelligence from Statoil.
- Previous studies: Statoil performed studies as part of developing the Hywind Maine floating wind farm pilot project.
- Other development experience.

#### 3.1 Wind Resource

SWUS has undertaken a preliminary assessment of the wind resource based on NREL’s Assessment of Offshore Wind Energy Leasing Areas for the BOEM Massachusetts Wind Energy Area [5] as well as Statoil’s in-house hind-cast wind model. Based on these two data sets, the wind resource at site is estimated 9 m/s at approximately 100 m above mean sea level (“amsl”), which is sufficient for a commercial offshore wind development.

It is to be noted that the uncertainty related to the wind data is high, and further investigation is required. SWUS envisages an on-site measurement campaign to establish a sound understanding of local wind resource conditions; and calibrate and validate the hind-cast data available. SWUS will seek synergies in designing wind resource and met-ocean measurement campaigns.



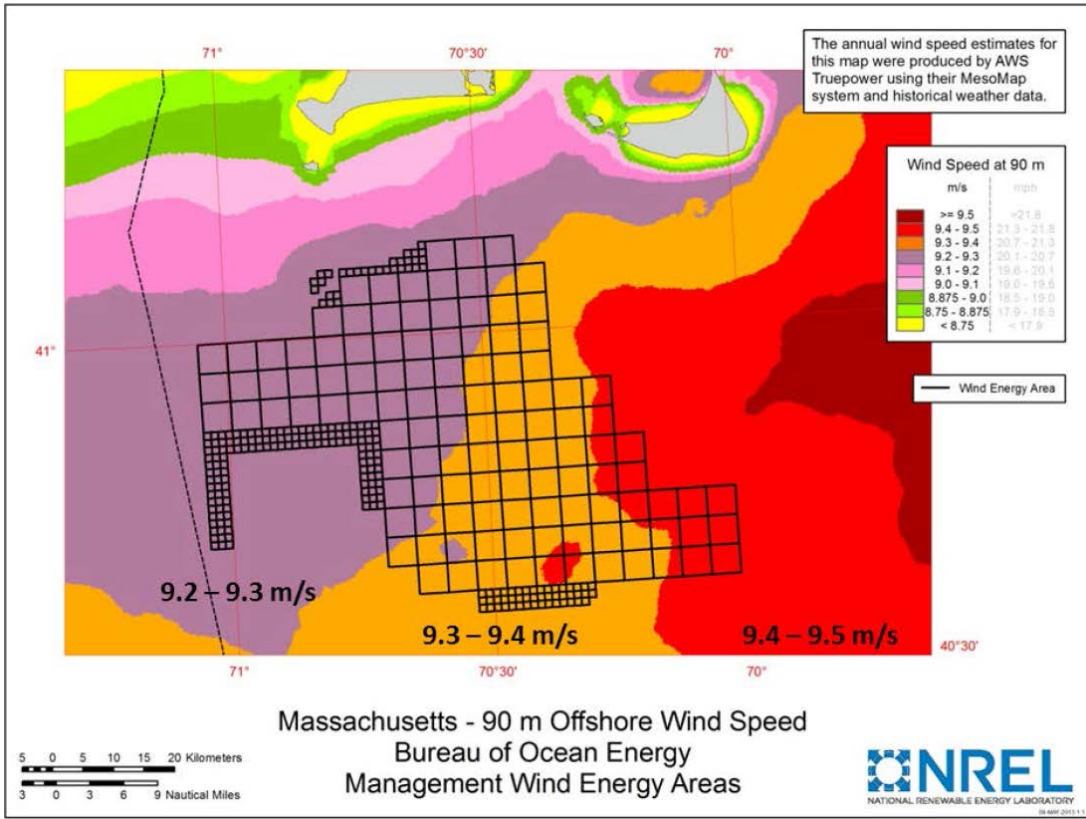


Figure 4-1 Annual Average Wind Speed at 90m amsl

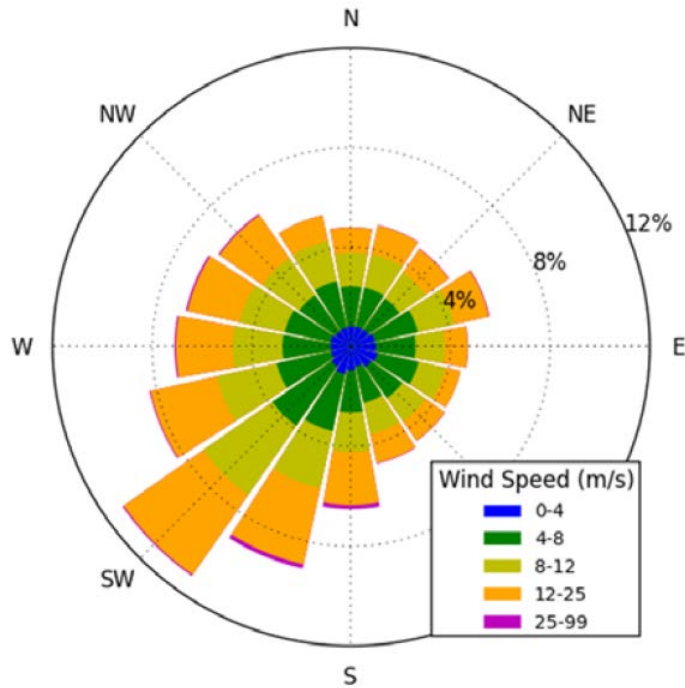


Figure 4-2 Wind Frequency Rose with Prevailing Winds from the Southwest Direction (Source: NREL)

### **3.2 Met-Ocean data**

SWUS has used information from Statoil's in-house global hind-cast dataset, as well as publically available measurement data [4] for a preliminary assessment of met-ocean conditions. Based on this data, wave conditions are considered moderate to high for developing an offshore windfarm.

For further investigation of the met-ocean conditions, SWUS envisages an on-site measurement campaign to establish a sound understanding of local met-ocean conditions, and to calibrate and validate the hind-cast data available. SWUS will seek synergies in designing wind resource and met-ocean measurement campaigns.

### **3.3 Bathymetry and Geology**

No detailed investigations of seabed conditions have been carried out.

### **3.4 Electrical Grid Interconnection**

An assessment of possible grid interconnection points has not been carried out. However, this is a key risk and needs to be addressed. SWUS will seek to engage with stakeholders to investigate options.

### **3.5 Environmental Impact Assessment**

BOEM prepared an Environmental Assessment (EA) for the Wind Energy Area prior to the Massachusetts lease sale in January 2015. The EA addresses environmental, social and socio-economic impacts related to the lease sale and site assessment activities within the area. Following a public hearing, it was concluded that the proposed activities covered by the EA would have no significant impact on environmental, social and socio-economic interests.

SWUS will identify the need for additional baseline surveys and initiate a fit for purpose environmental and social survey program, which will provide the necessary information for assessing the relevant impacts of the project development. Stakeholders will be consulted throughout the development process, and in line with the project stakeholder management plan, to allow for informed and robust decision making processes for SWUS and the relevant agencies.

## **4 Conformance with Government Initiatives**

Pursuant to 30 C.F.R. § 585.230(e), SWUS submits that the proposed lease conforms with the Commonwealth's planning initiatives. In August, the Massachusetts legislature passed, and Governor Charlie Baker signed into law, "An Act to Promote Energy Diversity." The law requires Massachusetts utilities to solicit 1,600 MW of offshore wind, with all 1,600 MW contracted by June 30, 2027. The utilities have until June 30, 2017 to issue the first solicitation. Subsequent solicitations must occur within 24 months of the previous one. The Department of Public Utilities may not approve a long-term contract that results from a subsequent solicitation and procurement period if the levelized cost of energy (LCOE) plus transmission costs is greater than or equal to the LCOE plus transmission costs resulting from the previous procurement. In order for a company to be eligible to participate in a solicitation, it must have a lease at least ten miles offshore that was acquired on a competitive basis after January 1, 2012.

## 5 Legal Qualification

With regard to SWUS's legal qualification to hold a lease, SWUS has been granted Company # 15058 with a notation that SWUS is authorized to hold a renewable energy lease, right of way, and right of use.

## 6 Technical and Financial Qualification

### 6.1 Technical Qualification

To hold an OCS renewable energy commercial lease, an applicant must demonstrate its technical qualifications showing it has the capability to construct operate, maintain, and terminate/decommission projects for which the applicant is requesting authorization. This showing can include a description of international or domestic experience with renewable energy or other electric-energy-related projects.

SWUS's technical qualification is based on Statoil's previous development and construction of fixed-bottom offshore wind projects, as well as relevant experience from the offshore oil and gas industry.

Statoil has extensive experience from its activities in the oil and gas as well as offshore wind industry. Following section summarize Statoil's offshore wind projects as well as relevant expertise and experience from oil and gas.

#### 6.1.1 Current and Prior Offshore Wind Projects

Under the BOEM Qualification Guidelines to Acquire and Hold Renewable Energy Leases and Grants and Alternate Use Grants on the U.S. Outer Continental Shelf issued September 12, 2012 ("Qualification Guidelines"), an applicant must provide for its prior or current projects: a general description, including project name, type, location, size (nameplate capacity), years in operation, and operating status. The applicant must also describe its specific role and that of key personnel and proposed contractors and consultants.

Statoil is working extensively towards reducing the costs of offshore wind, through technology qualification programs and in industry symposia (e.g., the Offshore Wind Accelerator consortium). Further Statoil has signed European Offshore Wind Industry Joint Declaration on cost reduction. The objective is to make offshore wind fully competitive with new conventional power generation within a decade.

Statoil has experience in developing fixed-bottom offshore wind farms in multiple locations.

##### 6.1.1.1 Sheringham Shoal

In 2009, Statoil committed to perform project management for developing the 317 MW Sheringham Shoal Offshore Wind Farm in the United Kingdom. Statoil was the project manager until commissioning was completed on January 12, 2013. The wind farm, consisting of 88 turbines, got the first power to grid in August of 2011 and was fully commissioned in October of 2012.

Table 7-1 summarizes the key facts and figures for the wind farm.

<b><i>The Project</i></b>	
<i>Name</i>	Sheringham Shoal Offshore Wind Farm
<i>Nameplate Capacity</i>	417 MW
<i>Total Area</i>	35 km <sup>2</sup>
<i>Distance to shore</i>	21 km

<b>Key Parameters</b>	
<i>Average Wind Speed</i>	9.3 m/s
<i>Water Depth</i>	17 – 22 m
<i>Offshore Export Cable</i>	22 km
<i>Onshore Export Cable</i>	22 km
<b>Design</b>	
<i>Turbine Rated Power</i>	3.6 MW
<i>Turbine Rotor Diameter</i>	107 m
<i>Foundations</i>	Monopiles
<i>Export Solution</i>	HVAC
<i>Export Voltage</i>	132 kV
<i>Inter Array Voltage</i>	33 kV

**Table 7-1 Sheringham Shoal Offshore Wind Farm - Facts and Figures**

### 6.1.1.2 Dudgeon

Statoil is the operator of the joint venture company which owns Dudgeon offshore wind farm, which is a 67 turbine, 402 MW project. The project is under construction and is expected to start generating electricity in early 2017.

Table 7-2 summarizes the key facts and figures for the Dudgeon offshore wind farm.

<b>The Project</b>	
<i>Name</i>	Dudgeon Offshore Wind Farm
<i>Nameplate Capacity</i>	402 MW
<i>Total Area</i>	55 km <sup>2</sup>
<i>Distance to shore</i>	35 km
<b>Key Parameters</b>	
<i>Average Wind Speed</i>	9.8 m/s
<i>Water Depth</i>	18 – 25 m
<i>Offshore Export Cable</i>	38 km
<i>Onshore Export Cable</i>	48 km
<b>Design</b>	
<i>Turbine Rated Power</i>	6 MW
<i>Turbine Rotor Diameter</i>	154 m
<i>Foundations</i>	Monopiles
<i>Export Solution</i>	HVAC
<i>Export Voltage</i>	132 kV
<i>Inter Array Voltage</i>	33 kV

**Table 7-2 Dudgeon Offshore Wind Farm - Facts and Figures**

### 6.1.1.3 Dogger Bank

As part of the Forewind consortium with three other developers, Statoil has secured all the necessary consents for up to 4.8 GW generating capacity (4x1.2 GW wind parks) at Dogger Bank in the UK. The focus on cost reduction for this development will benefit a possible extension and other future projects.

Table 7-3 summarizes the key facts and figures for the Dogger Bank offshore wind projects.

<b>The Projects</b>				
<i>Name</i>	Creyke Beck A	Creyke Beck B	Teesside A	Teesside B
<i>Nameplate Capacity</i>	1000 – 1200 MW	1000 – 1200 MW	1000 – 1200 MW	1000 – 1200 MW
<i>Total Area</i>	515 km <sup>2</sup>	599 km <sup>2</sup>	560 km <sup>2</sup>	593 km <sup>2</sup>
<i>Distance to shore</i>	131 km	131 km	196 km	165 km
<b>Key Parameters</b>				
<i>Average Wind Speed</i>	10 m/s	10 m/s	10 m/s	10 m/s
<i>Water Depth</i>	20 – 35 m	20 – 35 m	22 – 35 m	20 – 40 m
<i>Offshore Export Cable</i>	125 – 150 km	125 – 150 km	200 – 250 km	200 – 250 km
<i>Onshore Export Cable</i>	20 – 40 km	20 – 40 km	5 – 10 km	5 – 10 km
<b>Design</b>				
<i>Turbine Rated Power</i>	6 – 12 MW	6 – 12 MW	6 – 12 MW	6 – 12 MW
<i>Turbine Rotor Diameter</i>	150 – 220 m	150 – 220 m	150 – 220 m	150 – 220 m
<i>Foundations</i>	Monopiles / Jackets	Monopiles / Jackets	Monopiles / Jackets	Monopiles / Jackets
<i>Export Solution</i>	HVDC	HVDC	HVDC	HVDC

Table 7-3 Dogger Bank Offshore Wind Projects - Facts and Figures

#### 6.1.1.4 Arkona Becken

In 2016, Statoil entered the German offshore wind market through the acquisition of a 50% share in the Arkona Becken offshore wind farm project. The total Statoil investment will be in excess of EUR 1.2 billion. The Arkona Becken project is located in the Baltic Sea, 35 kilometers northeast of the Rügen island in Germany. It will consist of 60 6 MW- turbines, to be mounted on monopile foundations installed at water depths of 23 to 37 m.

The Arkona Becken wind farm will provide renewable energy for up to 400,000 households in Germany, making it one of the largest ongoing offshore wind developments in Europe. Statoil's partner, E.ON, will have responsibility for building and operating the wind farm. Start of electricity production is expected in 2019. Table 7-4 summarizes the key facts and figures for the Arkona Becken offshore wind project.

<b>The Project</b>	
<i>Name</i>	Arkona
<i>Nameplate Capacity</i>	385 MW
<i>Total Area</i>	39 km <sup>2</sup>
<i>Distance to shore</i>	35 km
<b>Key Parameters</b>	
<i>Average Wind Speed</i>	9 m/s
<i>Water Depth</i>	20 – 40 m
<b>Design</b>	
<i>Turbine Rated Power</i>	6 MW
<i>Turbine Rotor Diameter</i>	154 m
<i>Foundations</i>	Monopiles
<i>Inter Array Voltage</i>	33 kV

Table 7-4 Arkona Becken Offshore Wind Farm - Facts and Figures

#### 6.1.1.5 Hywind Scotland Pilot Park

Statoil is building the world's first floating wind farm. The wind farm located off the Scottish coast, will be in operation Q4 2017. The 30 MW pilot project will consist of five 6 MW floating turbines operating in waters

exceeding 100 m of depth. The pilot park objectives are to demonstrate cost efficient and low risk solutions for commercial scale floating wind parks.

## **6.1.2 Operational Experience and Decommissioning**

### **6.1.2.1 Operations**

Statoil has, along with its service providers, operated and maintained the following wind farms:

- Hywind Demonstration – Statoil owns and operates the Hywind demonstration floating windmill offshore Norway. It has been in operation since 2009.
- Havøygavlen onshore wind farm – In operation since 2002 (16 turbines, 40 MW), the plant incorporates the world’s first 3 MW direct drive turbine installed for testing and qualification for offshore use.
- Utsira onshore wind farm – In operation since 2004 (2 turbines, 1.2 MW). The plant also incorporated a complete stand-alone hydrogen generation and storage system, functioning as an energy conservation system to demonstrate a complete self-contained and emission-free energy supply system
- Sheringham Shoal – Statoil was the operator for the development and construction phase from 2005 to 2013.

### **6.1.2.2 Decommissioning**

- Decommissioning of one complete turbine at Havøygavlen wind farm (2008), with subsequent installation of a new turbine
- Decommissioning of the Utsira hydrogen plant in 2010, followed by connection of the wind farm to the open grid.
- In addition, Statoil has vast experience that it draws from decommissioning large and complex oil and gas industry projects

## **6.1.3 Oil and Gas Experience Related to Offshore Wind**

Statoil has more than 40 years' experience in the offshore oil and gas business, and is the world's leading company operating in waters deeper than 100 m (328 ft.). Statoil has extensive technical and commercial resources. In-house competence includes engineering, procurement, project and contract management, finance, health, safety, and environment (“HSE”), and a full range of specialized technical disciplines. The resources, experiences and expertise from offshore oil and gas are available for, and transferable to, the offshore wind sector. The ability to develop, install and operate complex offshore constructions has been utilized in all of Statoil's offshore wind projects.

HSE is Statoil’s top priority and the prerequisite for its license to operate in the oil and gas industry – this is also true for offshore wind. Offshore wind is a new industry with a risk picture that fits well with Statoil’s expertise and way of working. Statoil enforces the use of a strong professional team, strict procedures and training requirements, with offshore qualification training for all personnel working offshore. HSE is a vital part of the contract strategy and the management of contractor activities. Statoil will ensure that its high HSE standards are complied with in all parts of the operations, including contractors' activities.

Offshore wind development includes similar safety risks as oil and gas e.g. complex marine operations, heavy lifting, personnel transport, and coordination of parallel activities. Environmental impact assessments are an integral part of all offshore projects, and Statoil has vast expertise with marine life, environmental surveying and marine protection. In offshore wind we use our offshore experiences and methodologies to improve the

quality of survey and environmental protection. In Europe, Statoil is participating in joint industry projects investigating the impacts from offshore wind farms on seabirds and marine mammals (ORJIP and DEPONS), as well as sitting on stakeholder groups, such as FLOWW for the commercial fishing industry, to develop approaches for co-existence.

The most valuable experience transfer from oil and gas to offshore wind energy projects is within the areas of project management, marine engineering, and operation. The basic elements of Statoil's project execution model and systems can be applied to wind energy projects when adapted to the specifics of this area.

See Table 5 for a list of Statoil's general oil and gas experience in relation to primary offshore wind risks.

Hazard / Risk area	Statoil Experience
<b>Lifting operations</b>	Lifting from vessels to fixed and vessels to vessels and floating structures
<b>Working at heights</b>	Special focus on falling objects in campaigns and in classification of incidents and investigations
<b>Marine / Vessel operations</b>	Large number of marine operations offshore. Statoil operated vessel fleet for emergency preparedness. Transport of crude and products
<b>Helicopter operation</b>	Helicopters for personnel transport. Helicopter ownership and operation for emergency preparedness
<b>Select, engage and manage contractors</b>	Developed purchase systems where applicant and purchaser are independent. Focus on HSE and corporate social responsibility, in addition to performance, time, and cost
<b>Access to restricted/ confined spaces</b>	Need for repetitive training programs revealed and implemented
<b>Asset Integrity / Latent Design Effects</b>	Designing complex onshore and offshore structures and plants
<b>Exposure to live electrical conductors</b>	40 years of experience from offshore and onshore process plants
<b>Sub - sea installations</b>	Statoil has a long track record of installing, operating and retrieving bottom fixed sub-sea installations. Remotely operated vehicles (ROVs) have assisted operations and are in common use
<b>Diving Operations</b>	Large number of offshore dives. Major experience base has created a solid and sound approach. Statoil has been an important facilitator to develop diver-less methods for installation and intervention of subsea equipment

**Table 5: Offshore wind risk areas - abstract of Statoil's relevant experience****6.1.4 Identification of Key Personnel and Contractors**

As a part of its demonstration of technical capability, SWUS has a core team that will be supported by the wider Statoil organization, including a number of employees integrally involved in the development and operations of the Hywind Demonstration, Sheringham Shoal, Dudgeon, Hywind Scotland and Dogger Bank projects. Thus, SWUS brings an experienced team to the project.

**6.1.5 Adverse Legal or Regulatory Actions**

The Qualification Guidelines provide that an applicant should submit information regarding significant, relevant, and adverse legal or regulatory actions taken against the applicant in the last 5 years, and the resolution of such actions. If the applicant is a publicly-traded company, BOEM considers the Securities and Exchange Commission's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system an acceptable source for this information.

SWUS has not been the subject of any significant, relevant, and adverse legal or regulatory actions within the past five years. Further, SWUS's ultimate parent, Statoil, a publicly traded company, has not been the subject of any significant, relevant, and adverse legal or regulatory action within the past five years as indicated by a review of the Securities and Exchange Commission's EDGAR system.

**6.2 Financial Qualification**

Under Section 585.107(a)(2) of BOEM's regulations, an applicant must submit information establishing access to sufficient capital to carry out development. The required financial capability information is elaborated upon in the Qualification Guidelines, to which the following sections conform.

**6.2.1 Name, Location, and Description of the Applicant; Years in Operation**

SWUS is a limited liability company formed in Delaware, headquartered in Stamford, Connecticut, and is a wholly-owned subsidiary of Statoil US Holdings, Inc., formerly named Statoil North America, Inc. ("SUSHI"). SUSHI was formed in 1987 and has been in operation for 29 years. In the US, SUSHI engages in the exploration and development of oil and gas deposits in the Gulf of Mexico, and in onshore shale production in the Northeast (Marcellus), Texas (Eagle Ford) and North Dakota (Bakken). In Canada, SUSHI's affiliate Statoil Canada Ltd. has a significant position in the Alberta oil sands and also produces offshore Newfoundland.

In 2013, SWUS was established as the project company for Statoil's North American offshore wind projects and has been in operation for 3 years. SWUS will be the investor and developer of, and will carry financial liability for, the wind project. This is in line with Statoil's corporate practice for the wind industry.

**6.2.2 Group Profile**

Statoil is an international energy company, headquartered in Norway, with operations in 37 countries. Statoil has approximately 22,000 employees worldwide, is listed on the New York and Oslo stock exchanges (NYSE: STO) and has a current market capital valuation in excess of USD 50 billion. Statoil is the largest operator on the Norwegian continental shelf, and a license holder in numerous oil and gas fields worldwide.



In addition to international growth in oil and gas, Statoil plans to establish itself in renewable market segments, where the company has competitive advantages. With more than 40 years of experience gained from offshore oil and gas operations on the Norwegian continental shelf, and as the world's largest deep-water operator, Statoil sees a unique opportunity in using this competence to build a position in the growing offshore wind market.

Statoil has a growing profile in North America in both offshore and onshore activities. Statoil has ownership interests in ten producing offshore fields in the U.S. and holds leases in some of the most prolific onshore plays.

In 2008, Statoil acquired a 32.5% interest in Chesapeake Energy Corporation's Marcellus shale gas acreage in the Northeastern part of the U.S. In 2010 Statoil and Talisman formed a joint venture to develop and produce petroleum resources from the Eagle Ford shale in Southwest Texas, and in 2015 Statoil took over full operatorship. Finally, in 2011 Statoil acquired Brigham Exploration and became a major operator in the Williston Basin in North Dakota.

In 2007, Statoil acquired a significant oil sands position in Alberta, and Statoil Canada is now 100% owner and operator of the Leismer demonstration project, which began producing in January 2011.

Statoil also has an office in Stamford, Connecticut. The office's main functions are marketing and trading related to the company's petroleum and associated products, as well as natural gas activities in North America. Through the Stamford office's work, approximately 420,000 barrels of crude oil, petrol, propane and butane are delivered into the North American market every day.

### **6.2.3 *Statoil's Experience Raising Capital for Similar Projects or Projects of a Similar Scale***

Statoil has already demonstrated a major financial commitment to investment in offshore wind, with the Sheringham Shoal, Dogger Bank, Dudgeon, Hywind Demonstration projects, and technology qualification programs.

### **6.2.4 *Current Audited Financial Statements***

The Qualifications Guidelines require current, audited financial statements from an independent certified accountant, preferably using accounting standards accepted by the Securities and Exchange Commission, if available. If not available, the applicant must include a statement to that effect.

SWUS, through its direct parent SUSHI and ultimate parent Statoil ASA, offers strong financial capabilities to finance the development of the proposed project. The main financial figures for Statoil can be found in the company's Annual Report located at:

[http://www.statoil.com/no/InvestorCentre/AnnualReport/AnnualReport2015/Documents/DownloadCentreFiles/01\\_KeyDownloads/Annual\\_report\\_on\\_form\\_20-F.pdf](http://www.statoil.com/no/InvestorCentre/AnnualReport/AnnualReport2015/Documents/DownloadCentreFiles/01_KeyDownloads/Annual_report_on_form_20-F.pdf)

### **6.2.5 *Bankruptcy or Other Adverse Financial Proceedings***

The Qualification Guidelines require information regarding any bankruptcy or other adverse financial proceedings within the last 5 years, if applicable. If not applicable, the applicant should submit a statement to that effect.

Neither SWUS, SUSHI, nor their ultimate parent Statoil ASA has been the subject of bankruptcy proceedings or other adverse regulatory proceedings.

## 7 Acquisition Fee

Pursuant to 30 C.F.R. § 585.230(f) and 585.502(a), SWUS has submitted an acquisition fee via pay.gov of \$97,142.25, given that the requested acreage covers 388,569 acres.

## 8 References

- [1] BOEM Renewable Energy GIS Data. Source: <http://www.boem.gov/Renewable-Energy-GIS-Data/>. Last accessed: 2016-09-12.
- [2] Marine Cadastre publically available data sets. Source: <http://marinecadastre.gov/>. Last accessed: 2016-09-12.
- [3] NREL Dynamic Maps, GIS Data & Analysis Tools. Source: [http://www.nrel.gov/gis/data\\_wind.html](http://www.nrel.gov/gis/data_wind.html). Last accessed: 2016-09-12.
- [4] National Data Buoy Center. <http://www.ndbc.noaa.gov/>. Last accessed: 2016-09-12.
- [5] NREL: Assessment of Offshore Wind Energy Leasing Areas for the BOEM Massachusetts Wind Energy Area <http://www.nrel.gov/docs/fy14osti/60942.pdf>