

# FORTHWIND LIMITED

## SECTION 36 CONSENT VARIATION

### Screening Application

October 2018

Confidentiality Status: For regulatory consideration

SIGNATURES					
Rev	Date	Purpose of Issue	Prepared by	Checked by	Approved by
A1	15/10/2018	Issued	██████████	██████████	██████████

## **1. THE PROPOSED DEVELOPMENT**

Forthwind Ltd. (“Forthwind”) applied for consent under Section 36 (S36) of the Electricity Act 1989 for the construction and operation of the Forthwind Project in July 2015. The application was supported by an Environment Statement (ES) and in March 2016 supported further by a Habitats Regulations Appraisal Addendum (HRA) for Ornithology. A S36 consent was awarded by Scottish Ministers in December 2016.

The Forthwind Section 36 grants consent, as described in Annex 1, for a permitted generating capacity not exceeding 18 MW and comprising of two wind powered lattice structure electricity generating stations off the coast of Methil, Fife.

Forthwind have re-evaluated the consent envelope following a revision to the design parameters of the consented project and have identified the need to vary some of the consented project parameters listed in the Annex 1 of the S36 consent.

## **2. PURPOSE OF THIS DOCUMENT**

In compliance with the requirements of

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017) (the “EIA Regulations”);
- Electricity Generating Stations (applications for Variation of Consent) (Scotland) Regulations 2013 (the “Variation Regulations”); and
- Scottish government guidance on applying for a S36 Consent Variation (Scottish Government 2013),

Forthwind request Marine Scotland to provide a screening opinion as to whether the proposed changes within the forthcoming variation application can be scoped out of the Environmental Impact Assessment process.

This document provides a plan of the proposed variation changes and a brief description of the nature and purpose of the proposed development and its possible effects on the environment. The intent is to provide Marine Scotland with the necessary information to determine whether the proposed variation application requires an accompanying Environment Impact Assessment.

## **3. NEED FOR A CONSENT VARIATION**

Offshore wind technology has witnessed significant advances over the last 3 years since the original Forthwind application in July 2015; when it was considered that a wind turbine capacity between 6 to 9 MW was at the cutting edge of technology demonstration. However, by 2017 through incremental efficiencies in technology design the average capacity of new offshore wind turbines installed was 5.9MW (a 23% increase on 2016) and now turbine technologies providing 10 MW are commercially available on the market. By 2024, the trade body WindEurope anticipate turbines with capacities of up to 15MW should be available<sup>1</sup>.

The Forthwind project is being developed to demonstrate and validate new innovative offshore wind technology in 2019/20; enabling series production for wider global market entry by the mid-2020’s.

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<sup>1</sup> Pilita Clark “*Bigger, higher and floating – advances that make wind a better power source*”, Financial Times, 08 January 2018

However, to be competitive within the global offshore wind market, the turbine technology to be demonstrated needs to have a capacity of between 12 to 15MW.

Although not specified in the Section 36 consent, it is considered that the consent was awarded for two turbines with an individual rated capacity of up to 9 MW; meaning that the total consented capacity of the proposed development is 18MW. To allow incorporation of new technology efficiencies into the development, Forthwind are now seeking an increase in consented capacity of 30MW.

Forthwind has undertaken site wind measurements since the original application was submitted in 2015. The surveys identified the predominant wind direction is west south west, meaning that one turbine (turbine A in figure 1) is in the wake of the other turbine (turbine B in figure 1) creating problems from a power production and long-term fatigue. This has led to the conclusion that one of the turbine locations (turbine A in figure 1) would benefit in being relocated to an area with more suitable ground conditions and “cleaner” winds. The overall footprint of the consented area will reduce from the current 1.214km<sup>2</sup> to 0.97km<sup>2</sup>.

#### 4. UPDATED PROJECT DESCRIPTION

Forthwind is seeking to vary the S36 consent by modification of three parameters related to the wind turbine generators that may be deployed. Specifically, a variation is being sought to allow:

- An increase in the permitted generating capacity to 30 MW
- Movement of Turbine A (as per Figure 1 and 3 of the S36 consent) from BNG coordinates 337812 697333 to a new location (BNG 337319 694939) – subject to a 100m micro siting.
- Amending and reducing the overall area of the consented red line project boundary to encompass the new turbine location and associated cable corridor.

The variation request will not seek to change any of the consented technical turbine parameters (e.g. rotor diameter, blade tip height, hub height or operational lifetime).

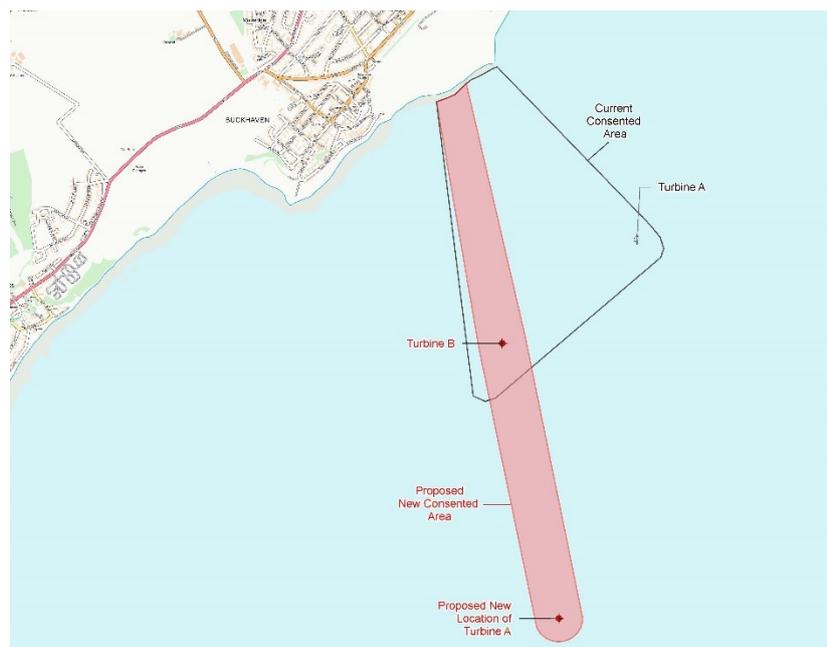


Figure 1 - Proposed Variation Consent Area

## 5. UNDERSTANDING THE POTENTIAL ENVIRONMENTAL IMPACT OF THE PROPOSED VARIATION

Forthwind has undertaken a review of what potential environmental receptors could be affected by the proposed changes, and whether the modified Forthwind project potentially could cause significant environmental effects greater than those effects described in the original Environment Statement and HRA addendum.

The revised project parameters have been reviewed against each topic within the original ES and HRA addendum to identify whether there is the potential for a change to an existing impact, or for a new impact to arise, and whether further assessment is required. The rationale for screening and identifying the potentially affected aspects is provided and a summary is presented in table 2.

Table 1 - Summary of Variation Screening Assessment

Changed Parameter	Environmental Aspect																
	Planning Policy	Physical Processes	Landscape and Visual	Ornithology	Marine Mammals	Commercial Fisheries	Benthic Ecology	Archaeology	Cultural Heritage	Fish and Shellfish	Noise	Shipping and Navigation	Socio-economics	Other Marine Users	Terrestrial Ecology	Hydrology, Hydrogeology and Soils	Other Miscellaneous Users
Increased Capacity	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Locational Change of one turbine	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Change in red line boundary	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
No	No additional potential impact on receptor to that already assessed for consented project, no further assessment required.																
Yes	Potential for receptor to be further impacted, or there is a degree of uncertainty, therefore further assessment is required.																

Table 2 - Variation Screening Assessment

Environmental Aspect	Potential Impact	Rationale	Further Assessment?
Planning Policy	All impacts All project phases	It is considered that the changes do not affect any planning policies in effect considered at the time	No
Physical Processes	All impacts All project phases	Although the new turbine A location is in slightly deeper water (20m) to the original consented location (15m), the superficial sediment deposit depths are slightly less (8m as opposed to 12m) and the sediment composition more akin to the turbine B location. There is no additional physical impact on the seabed footprint.	No
Landscape and Visual	All impacts All project phases	The design and dimensions of the turbines are unchanged, and the revised location of turbine A is further away from the nearest sensitive receptors. As the turbine design remains unchanged, the	No

Environmental Aspect	Potential Impact	Rationale	Further Assessment?
		relative proximity of the revised location to the original site ensures that the Landscape and Visual impact remains within the overall visual effect of the original consented application. Overall the changed location should result in a slightly less impact to that predicted within the original application.	
Ornithology	All impacts All project phases	The design and dimensions of the turbines remain unchanged and the revised location of turbine A is located further away from near shore area, the Largo Bay area and the Levenmouth turbine. As such it is anticipated that the predicted impact on the inshore qualifying features will be slightly less than identified within the original ES.	No
Marine Mammals	All impacts All project phases	Although the revised location of turbine A is in slightly deeper waters, it remains relatively close to the original turbine location. The construction methodologies and foundation design have not changed so no additional impacts are anticipated.	No
Commercial Fisheries	All impacts All project phases	The foundation footprint of the turbines remains unchanged. The revised turbine location is further offshore and adjacent to a Forth Ports anchorage position. The revised location is not anticipated to present any additional fisheries impact than that previously consented.	No
Benthic Ecology	All impacts All project phases	The revised turbine location remains within the core survey area undertaken during the original EIA process. As the turbine foundation and design remains unchanged, no additional impact is anticipated beyond that already consented.	No
Marine Archaeology	All impacts All project phases	The original ES so found no recorded wrecks within the development area. Ten shipwrecks have been identified dating from the 19th century within grid square NT 36 97, but none of these wrecks are near the revised turbine location. A recent review of the Historic Marine Protected Areas in Scottish territorial waters database provided by Historic Environment Scotland identified only one Historic MPA (Campania) within the area at around 15km away from the development site. Therefore, no additional impact on Marine archaeology is anticipated.	No
Cultural Heritage	All impacts All project phases	All aspects of the project design fall within the consented envelope for direct effects and it is not thought that the change in turbine location will result in a change to the indirect effects to any setting of cultural heritage assets as assessed within the original ES.	No
Fish and Shellfish	All impacts All project phases	As all the design and foundation aspects of the turbines remain unchanged and that the revised location falls within the original ES study area, it is	No

Environmental Aspect	Potential Impact	Rationale	Further Assessment?
		not thought the variation will result in any additional impacts that that already consented.	
Noise	All impacts All project phases	Overall it is thought that there will be a reduction in noise impact from the development both during construction and operation due to the revised location being further away (offshore) from noise sensitive receptors. In addition, the potential cumulative noise issue with the Levenmouth turbine will be eliminated should the turbine be moved to the new location.	No
Shipping and Navigation	All impacts All project phases	This variation proposal will remain within the parameters of the consented original ES assessment.	No
Socio-Economics, Tourism and Land Use	All impacts All project phases	There is little to no change in the socio-economic case, as the need for offshore wind demonstration project still exists which will benefit the economic potential around the area.  No additional significant effects beyond the consented envelope from the proposed changes to the tourism, recreation and land use resources.	No
Other Marine Users	All impacts All project phases	As the design of the turbines remain the same, all aspects of the project design fall within the consented envelope. The revised location has already been cleared by the Joint Radio Communications, the CAA, Edinburgh airport and the DIO safeguarding unit as part of an earlier extension scoping request (November 2016) carried out by Forthwind.	No
Terrestrial Ecology	All impacts All project phases	The variation will have no impact on terrestrial ecology aspects of the project as all fall within the consented envelope.	No
Hydrology, Hydrogeology and Soils	All impacts All project phases	All hydrology, hydrogeology and soils aspects of the project design remain within the consented envelope.	No
Other Miscellaneous Users	All impacts All project phases	Miscellaneous issues covered within the original ES covered the following aspects: <ul style="list-style-type: none"> <li>• Access and transport</li> <li>• Air Quality</li> <li>• Climate and Carbon Balance</li> <li>• Health and Safety Considerations</li> <li>• Waste Management</li> <li>• Radio Links</li> <li>• Shadow Flicker</li> </ul> As the design of the turbines remain the same, all aspects of the project design fall within the consented envelope and predicted impacts will be less or the same as previously consented.	No
Climate Impact and Change	All impacts All project phases	Although a new requirement introduced by the 2017 EIA regulations (The Electricity Works (Environmental Impact Assessment) (Scotland)	No

Environmental Aspect	Potential Impact	Rationale	Further Assessment?
		<p>Regulations 2017); this aspect was addressed under the <i>"Miscellaneous Users"</i> chapter within the Forthwind ES. As stated in the Forthwind ES, the development will be an offshore wind turbine demonstration facility and as such it is not possible to predict the energy that will be produced by the Development over its lifespan; meaning a calculation of displacement of CO<sub>2</sub> cannot be made. It can however be stated that any energy generation from the site will result in the displacement of CO<sub>2</sub> generated from non-renewable sources and that the aim of the project, to further the development of the UK offshore wind industry, will contribute to the reduction of CO<sub>2</sub> emissions from UK power generation in the long term. Overall the proposed development will lead to the removal of more carbon emissions from the atmosphere that it creates (i.e. it is a carbon negative development).</p> <p>In addition, the reduction of physical infrastructure and the larger power generation of the single turbine indicate that the new option within the variation proposal would lead to slightly less CO<sub>2</sub> emissions in the manufacturing and installation phase.</p> <p>With respect to climate change adaptation, this is largely a project specific consideration, i.e. consideration of the resilience of the project to climate change and the extent to which climate change could alter the predicted effect on operational production levels and associated carbon reduction. As this is a test and demonstration facility for one turbine (i.e. small scale), it is regarded that from a proportional point of view, this aspect is not a significant consideration and it is therefore proposed that this issue is scoped out.</p>	
Major Accidents and Disasters	All impacts All project phases	<p>Although a new specific requirement introduced by the 2017 EIA regulations (The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017), major accident and disaster aspects have previously been addressed elsewhere in the Forthwind ES. Specifically, through a navigational risk assessment (NRA), considered in the shipping and navigation chapter and the assessment of potential impact on military and civilian aviation activities within the <i>"Other Marine Users"</i> chapter. It is not anticipated that the proposed variation will have additional impact to what has already been consented.</p> <p>In addition, as previously advised in the Access and Transport section within the <i>"Miscellaneous Issues"</i> chapter, the majority of turbine components will be assembled on site or delivered to the site by sea, with construction/ decommissioning traffic being essentially limited to the transportation of the equipment required for landfall and the delivery of a number of</p>	No

Environmental Aspect	Potential Impact	Rationale	Further Assessment?
		<p>onshore elements to the Fife Energy Park. During operation the movement of traffic associated with the project is primarily associated with personnel movement.</p> <p>Overall the potential for a major accident on the project is considered not be significant and is it proposed that this aspect is scoped out.</p>	
Human Health	<p>All impacts All project phases</p>	<p>Although new requirement introduced by the 2017 EIA regulations (The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017), aspects of human health have been considered throughout the original Forthwind ES; specifically:</p> <ul style="list-style-type: none"> <li>• Water Quality (chapter 6);</li> <li>• Construction and operational noise (chapter 14);</li> <li>• Access and impact on recreation (chapter 16);</li> <li>• Effects of construction dust (17); and</li> <li>• Shadow Flicker (chapter 17);</li> </ul> <p>All aspects of human health previously considered within the Forthwind ES, the impacts of the proposed variation fall within the current consent envelope.</p>	No