



**Smart Wind Ltd  
Hornsea Offshore Wind Farm (Zone 4) – Project 2**

**Planning Inspectorate Reference: EN010053**

**Detailed Written Representations by  
the Environment Agency  
Unique Reference Number: 10031161**

**15 July 2015**

Environment Agency  
Waterside House  
Waterside North  
Lincoln  
LN2 5HA  
Tel: 01522 785889

## **Summary**

The Environment Agency has statutory duties in respect to: flood and coastal risk management, water resources, water quality, salmon and freshwater fisheries and contributing to sustainable development.

We have continued to work with the Applicant in respect of the issues of concern raised in our Relevant Representations dated 22 April 2015.

Issues in respect of benthic subtidal and intertidal ecology and the Water Framework Directive (WFD) have now been resolved to our satisfaction and we concur with the conclusions of the WFD assessment that the Project is not likely to have a non-temporary effect on the status of WFD parameters.

There remain outstanding areas of concern in respect of marine processes, namely the Applicant's consideration of tidal model sensitivity to climate change and the cable landfall burial depth and related assessment. We are seeking further information/sensitivity analysis regarding this to ensure that the project does not impact on our ability to deliver the Humber Flood Risk Management Strategy during the coming years.

There remains a difference of opinion in respect of the reversible nature of any effects on the aquifer. Notwithstanding this, appropriate controls are contained in the Development Consent Order (DCO) to ensure relevant investigations, risk assessments and remediation will be undertaken prior to construction.

We have requested and the Applicant has agreed to amend various DCO Requirements to ensure there is adequate protection for flood defence assets. In addition to this, we have now agreed to the disapplication of some legislative provisions, subject to the inclusion of Protective Provisions (as currently shown in Schedule L Part 1 of the Draft DCO, January 2015) being included in any DCO granted by the Secretary of State.

## **1.0 Introduction**

- 1.1 The Environment Agency is an executive non-departmental public body established under the Environment Act 1995. It is an adviser to Government with principal aims to protect and improve the environment, and to promote sustainable development. It plays a central role in delivering the environmental priorities of central government through its functions and roles. It is also an adviser to local decision makers in its role as a statutory consultee in respect of particular types of development, as listed in Schedule 4 of the Development Management Procedure Order 2015. For the purposes of this Development Consent Order (DCO) application, it is a statutory interested party.
- 1.2 The Environment Agency takes action to conserve and secure proper use of water resources, preserve and improve the quality of rivers, estuaries and coastal waters and groundwaters through pollution control powers and regulating discharge consents. We have regulatory powers in respect of waste management and remediation of contaminated land designated as special sites. We also encourage remediation of land contamination through the planning process.
- 1.3 The Environment Agency is the principal flood risk management operating authority. It has the power (but not a legal obligation) to manage flood risk from designated main rivers and the sea. The Environment Agency is also responsible for increasing public awareness of flood risk, flood forecasting and warning and has a general supervisory duty for flood risk management. As of 2008 the Environment Agency also has a strategic overview role for all flood and coastal erosion risk management.
- 1.4 The Environment Agency is the competent authority for England for the purposes of the Water Framework Directive, in conjunction with (as necessary) the Secretary of State (for DEFRA). Regulation 3(1) of The Water Environment (Water Framework Directive)(England and Wales) Regulations 2003 requires that the Secretary of State and the Environment Agency must exercise their relevant functions so as to secure compliance with the requirements of the Directive.
- 1.5 The Environment Agency also has statutory duties under the Environment Act 1995 (s6) to generally promote the conservation of fauna which are dependent on an aquatic environment to the extent it considers desirable and to 'maintain, improve and develop' salmon fisheries, trout fisheries, freshwater fisheries and eel fisheries in England.
- 1.6 We also issue Environmental Permits under the Environmental Permitting (England and Wales) Regulations 2010, which covers water discharge consenting, groundwater authorisations, radioactive substances regulation authorisations and waste permitting activities.

1.7 On 22 April 2015 the Environment Agency made Relevant Representations to the proposal by SMart Wind Limited (the Applicant) to construct up to two offshore wind generating stations with a total capacity of up to 1,800MW with associated offshore and onshore infrastructure (the Project). The purpose of these Written Representations is to provide an update on the summaries contained in our Relevant Representations.

## **2.0 Benthic Subtidal & Intertidal Ecology and the Water Framework Directive**

2.1 The Applicant provided additional information to us in respect of the Water Framework Directive (WFD) assessment during a telecom on 8 May 2015. A summary of this additional information is included in the Statement of Common Ground (SoCG) between the Applicant and the Environment Agency at Appendix A, Table A1 and Appendix C, Table C2. We can confirm that all matters relating to the WFD are now resolved and we concur with the conclusions of the WFD assessment that the Project is not likely to have a non-temporary effect on the status of WFD parameters.

## **3.0 Marine Processes**

3.1 The Applicant has provided us with additional information in respect of marine processes. Our main concern relates to the impact the project may have on flood defence assets, particularly those in the vicinity of the landfall site. The Applicant's additional information is included at Appendix D of the SoCG between our organisations. The EA has the following comments to make on this, which are provided under three topic headings.

3.2 ***Consideration of tidal model sensitivity to climate change*** - The Applicant refers to Lowe *et al* (2009) as the basis for their central estimate of sea level rise. The scientific communities understanding of climate change and sea level rise is constantly improving as further research is undertaken and evidence collected. This includes the work of Grinsted *et al.* 2010, Jevrejeva *et al.* 2010, 2012, and Church *et al.* 2013. Lowe *et al* (2009) focuses on providing a best-guess or a high-end estimate of future relative sea level rise, which does not have any probability attached. As such, it does not deal with the point raised in our representations about how the Applicant has addressed the potential impact of their development against potential changing climate change. They refer in Appendix D to the simple assumption that the sea level rise factor applied will apply equally across all tidal levels and to extreme sea levels. This takes no account of potential changes in storminess with climate change.

3.3 From the evidence presented it does not appear that the Applicant has undertaken sensitivity analysis against the H++ scenario presented within the Environment Agency (2011) guidance to which they refer. In 2009 a new set of guidance, UKCP09 was published. This guidance

included 3 different emissions scenarios (low, medium and high) - each scenario had lower and upper confidence intervals. The Environment Agency revised the PAG3 supplementary note on climate change with the Adapting to [Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities](#) (2011). That advice provides numbers to use for climate change in flood and coastal erosion risk management decision making and a methodology. The numbers used in the advice provide a representation of the uncertainty in the scientific knowledge of climate change, providing a change factor (the current best estimate of change) and an upper and lower end estimate to represent the majority of the range of confidence. For sea level rise, the 95<sup>th</sup> percentile of the medium emissions scenario is used as the change factor as Greenland and Antarctic melting are not well represented in the UKCP09 sea level rise projections and the 50% was agreed as under-representing the risk.

- 3.4 Guidance for planners continues to reference Planning Policy Statement 25/PAG3 allowances, this is because a managed adaptive approach is not appropriate for development decisions and the old allowances are still thought a precautionary level to plan for. It should be noted though that sea level rise projections in UKCP09 although show close correspondence with the sea level rise allowances in PPS25/PAG3, UKCP09 does present a plausible high end scenario up to 1.9m for the UK. The older PAG3 guidance provided numbers for sea level rise, but not for changes to storm surge. The new advice does provide guidance for storm surges. The Applicant's assessment appears to have used the newer guidance but not to have taken account of the guidance on changes to storm surges and waves.
- 3.5 If the Applicant carried out some sensitivity analysis with the H++ scenario, this would result in the need to calculate sea level rise at 6mm per annum until 2025 and then rising at 12.5mm per annum from 2026 until 2050. In the Environment Agency (2011) guidance it also states that it is not possible to estimate how likely changes to storm surges are to occur but that the H++ storm surge scenario is considered to be more likely than the upper end of the H++ sea level rise range. As such we would have expected some assessment of this within the Environmental Statement (ES), especially if this has the potential to impact on the buried cable, or if this has the potential to interact with and potentially influence wave patterns as a consequence and hence flood risk (Volume 2 Chapter 1 - ES ref 7.2.01). It is our opinion that the assessment should include the 20cm during the 2020s, with 35 cm included in the assessment until the end of the life of the development.
- 3.6 **Cable landfall burial depth and related assessment** - We welcome the clarification provided in Appendix D of our SoCG with regards to the cable landfall burial depth. However, the Applicant has yet to demonstrate what a potential revised beach profile, accounting for sea level rise and changes in elevation and shape of the foreshore in

response to climate change, may look like and hence what the minimum level of cover over the cable in the longer-term will be. In paragraphs 3.5.124-3.5.125 of Volume 1, Chapter 3 (Project Description) of the ES, the Applicant refers to their preference to leave the cables in situ following decommissioning:

*Onshore decommissioning*

*Cable landfall*

*3.5.124 To minimise the environmental disturbance during wind farm decommissioning the preferred option is to leave cables buried in place in the ground with the cable ends cut, sealed and securely buried as a precautionary measure.*

*3.5.125 Alternatively, partial removal of the cable may be achieved by pulling the cables back out of the ducts. This may be preferred to recover and recycle the copper and/or aluminium and steel within them.*

- 3.7 We request that the Applicant provides clarification as to what has been assessed, and present us with evidence to give confidence that the cables will remain buried to 2108 (which represents the lifetime of the Humber Flood Risk Management Strategy, which is 100 years from its publication in 2008). If it is the Applicant's intention to remove these cables and associated ducting following decommissioning of the wind farms, we would welcome clarification of this matter.
- 3.8 ***Tidal levels applied within landfall assessment*** – We are satisfied with the response provided by the applicant in Appendix D of the SoCG with regard to tidal levels applied within landfall assessment. As such, we consider this matter is now resolved to our satisfaction.
- 4.0 Geology and Ground Conditions**
- 4.1 There remains a difference of opinion in respect of the reversible nature of any effects on the aquifer. Notwithstanding this, the potential impact on the aquifer is low due to the appropriate controls being in place within the DCO, i.e. Requirement 13 (relating to contaminated land and groundwater), which will ensure relevant investigations, risk assessments and remediation are undertaken prior to construction.
- 5.0 Draft Development Consent Order**
- 5.1 ***Article 3 Disapplication of Legislative Provisions*** – the Environment Agency has given consent conditionally under s150 Planning Act to the disapplication of the legislation listed in Article 3 of the draft DCO. Our consent is conditional and shall only be treated as consent under s150 Planning Act if Protective Provisions in the form of those which appear in Schedule L Part 1 of the draft DCO (January 2015) submitted with the application are included in any DCO granted by the Secretary of State pursuant to the application. A copy of our conditional consent is attached as Appendix A for the Examining Authority's information.

- 5.2 **Schedule A Part 1, Works No. 5A and 5B** – the Applicant has agreed to include additional wording in Part 3 Requirement 2(8) to provide certainty that trenchless techniques only will be employed for the crossings under the sea defences i.e. *(8) The electrical circuits comprised in Work No. 5A and 5B must be installed by use of, or combination of, a trenchless technique, ploughing, trenching and jetting with the exception that where the electrical circuits comprised in Work No. 5A and 5B cross under the existing sea wall they must be installed using a trenchless technique.* This wording satisfies our concern in relation to crossing sea defences.
- 5.3 **Schedule A Part 1, Works No. 7A and 7B** – the Applicant has agreed to include additional wording in Part 3 Requirement 2 to confirm that *“the electrical circuits comprised in Work Nos, 7A and 7B must be installed by use of a trenchless technique where crossing under a main river”*. This wording satisfies our concern in relation to crossing main rivers.
- 5.4 **Schedule A Part 3, Requirement 16 Prohibited Access** – the Applicant has agreed to amend this requirement to allow us 2 months in which to notify them of our decision following receipt of a submitted scheme. This amendment is welcomed and satisfies our representation on this matter.

We reserve the right to add to or amend these representations, including requests for DCO Requirements should further information be forthcoming during the course of the examination on issues within our remit.

## **APPENDIX A**

**Environment Agency letter of consent to the  
disapplication of legislation, dated 10 July 2015**

Chris Jenner  
Environment and Consents Manager  
SMart Wind Limited  
11<sup>th</sup> Floor  
140 London Wall  
London EC2Y 5DN

Your ref: EN010053  
Our ref: AN/2015/121223

Date: 10 July 2015

Dear Mr Jenner

**Hornsea (Round 3, Zone 4) Offshore Wind Farm: Project Two  
Consent to Disapplication of Legislation**

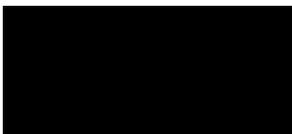
On behalf of the Environment Agency I confirm that the Environment Agency gives consent conditionally under s150 Planning Act to the dis-application of the legislation listed below in any Development Consent Order granted by the Secretary of State pursuant to the application made on 30 January 2015 for the Hornsea Two Offshore Windfarm Order 201 [X] ('the application').

- (a) section 109 (structures in, over or under a main river) of the Water Resources Act 1991;
- (b) the provisions of any byelaws made under, or having effect as if made under, paragraphs 5, 6 or 6A of Schedule 25 to the Water Resources Act 1991, which require consent or approval for the carrying out of the works;
- (c) section 23 (prohibition of obstructions, etc. in watercourses) of the Land Drainage Act 1991;
- (d) the provisions of any byelaws made under section 66 (powers to make byelaws) of the Land Drainage Act 1991 which require consent or approval for the carrying out of the works.

This consent is conditional and shall only be treated as consent under s150 Planning Act if Protective Provisions in the form of those which appear in Schedule L Part 1 of the draft DCO (January 2015) submitted with the application are included in any DCO granted by the Secretary of State pursuant to the application.

If you have any further queries, please do not hesitate to contact me.

Yours sincerely



**Claire Rose**  
**Coastal Partnerships and Strategic Overview Team Leader**  
**Lincolnshire & Northamptonshire Area**

Direct dial: 01522 785052  
Email: [claire.rose@environment-agency.gov.uk](mailto:claire.rose@environment-agency.gov.uk)



Awarded to Lincolnshire & Northamptonshire  
Area

