

# Westray South Tidal Project

Name of person filling in this form

Nathan Cox (Plymouth University)

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Project Name: Westray South Tidal Project

Company: SSE Renewables Developments (UK) Ltd

Project description:

Project Developer: SSE Renewables Developments (UK) Limited

Technology Type: Tidal devices

Resource: Tidal

Project Scale: Planning stages

*Installed Capacity:* Potential for 200MW

*Additional Description:* SSE Renewables has been awarded exclusive rights to develop Westray South, a 200MW tidal energy site in Pentland Firth and Orkney Waters Strategic Area. The award is part of part of the world's first commercial leasing programme for wave and tidal energy generation projects, undertaken by The Crown Estate.

The Project is located in the Westray Firth off the coasts of Eday, Egilsay and Rousay.

SSE will now work closely with statutory bodies, local communities and The Crown Estate to develop the site prior to bringing forward an application.

*Project Website:* <http://www.sse.com/OurBusiness/SSERenewables>

Location: Pentland Firth (58.7160° N, 3.1150° W) and Orkney waters (59.0000° N, 3.0000° W). The AfL area covers water depths ranging from 25 – 54m and lies adjacent to the European Marine Energy Centre's (EMEC) Fall of Warness tidal test site, approximately 24km north of Kirkwall which is the closest sizeable port.

Process status: A phased approach to development The Agreement for Lease area is effectively an 'area of search' within which SSER hopes to identify a development zone or zones suitable for a commercial scale tidal project, built in two distinct phases. It is proposed that Phase I will be within the range of 30 - 45MW with Phase II potentially bringing the total installed capacity up to 200MW. The proposed installed capacity of Phase I has increased since the circulation of the pre-scoping Project Briefing Document of May 2011.

Licensing Information: SSE Renewables (SSER) has been awarded an Agreement for Lease (AfL) for the Westray South site following The Crown Estates Pentland Firth and Orkney

Waters Leasing Round. Based on present knowledge of the site it is proposed that a tidal array of up to 200 megawatts (MW) capacity could be installed which equates to approximately 200 devices.

The AfL provides SSER with an initial 5 year exclusive development period, in respect of other renewable energy developers, and is not a licence or consent to install tidal energy converters on the site. Securing such a license of consent is a condition imposed by The Crown Estate before a long term lease would be entered into. SSER is currently undertaking site investigation and project development planning activities, while in parallel commencing the Environmental Impact Assessment (EIA) and Navigational Risk Assessment (NRA) processes. These are required as part of the consenting process relevant to a project of this type and scale.

The EIA and NRA processes for the Westray South tidal array will consider the likely impacts of the project which are anticipated to arise through the installation, operation, maintenance and decommissioning phases of the project. At present a specific tidal energy converter and support/foundation structure has yet to be selected. It is anticipated that within the EIA and NRA the potential significance of any effects will be identified and assessed across a range of potentially applicable tidal technology components on a 'worst case' basis whilst remaining within acceptable limits and ensuring the EIA and NRA complies with legal requirements and relevant guidance.

Environmental survey issues: The Westray Firth is an important, navigation channel between the North Isles and the Orkney mainland and between the Atlantic and the North Sea. It is particularly important for ferries transiting from Kirkwall to the North Isles, and for vessels supporting tidal energy deployments in the Fall of Warness. Marine mammals such as cetaceans (whales and dolphins), pinnipeds (seals) and marine reptiles (turtles) are regularly spotted around the Pentland Firth and Orkney waters. The seabed of the AfL and offshore area of search is believed to be largely composed of a mixture of coarse sediments and boulders and these substrata may provide suitable habitat for species which spawn on the seabed, such as herring or sandeels.

Environmental webpage: <http://www.sse.com/WestraySouth/ProjectInfo/>

<b>Baseline and project effects studies:</b>				
<b>General description</b>				
<b>Receptor</b>	<b>Study description including question and/or objective</b> (several can be listed per receptor)	<b>Design and methods</b> (brief description)	<b>Results</b> (brief description)	<b>Status</b> (planned, underway, completed, with dates)
Potential impacts on commercial fisheries/Fishermen	Loss of access to fishing grounds, during Installation, operation and maintenance	Desk based study	There is a significant chance the Westray project will reduce access points for fishermen. It is known that the AfL area and the wider area is actively used by both creel and dive fishermen.	Completed

Potential impacts on commercial fisheries/Fishermen	Obstruction to regular fishing vessel transit routes	Desk based study	Larger fishing vessels use parts of the AfL as a regular transit route to/from fishing grounds. It is also assumed that smaller vessels transit the AfL area and the adjacent coastal area on a highly regular basis to reach other fishing grounds within and outwith Orkney	Completed
Ports and harbours	Opportunity for expansion of existing port infrastructure	Statistical analysis	The main ports (Kirkwall and Hatston) are near capacity with existing users and are likely to reach capacity during busy periods due to increased activity at the EMEC tidal test sites in the coming years. Major upgrade works are about to commence at Hatston which will increase available quayside space considerably which will help to accommodate any additional vessels which will operate out of the area as part of these proposals. There are also plans to increase adjacent onshore space available for project developers in the Hatston Industrial Estate Area. Whilst no decision has been made, it is recognised that the project will require both a loadout and operational base.	Ongoing
Archaeology	Physical disturbance of submerged historic and prehistoric land surfaces and archaeological finds (known and unknown)	Consultation with Historic Scotland	Potential known and unknown features within the development footprint may be disturbed during	Completed

			construction activities.	
Acoustics	Disturbance to marine mammals from underwater noise generated by DP vessels and devices	Based on available data	Dependant on information on species and behaviour in the vicinity of development – further investigation required	Ongoing
Benthos	Substratum / habitat loss / damage from placement of devices and other infrastructure on the seabed, cable laying	Site specific survey and Desk based research	Significance of impact not known as will depend on species and habitats within the footprint and surrounding area of any infrastructure placed on the seabed, will be considered further	Ongoing
Fish and fisheries	Effects on herring and sand eel populations from disturbance to spawning grounds	Based on available data	Further information on species present required before assessment can be made regarding disturbance due to noise or physical disturbance of the seabed impacting spawning grounds or species	Ongoing
Marine mammals	Marine mammal collision with vessels	Based on available data	Dependant on information on species and behaviour in the vicinity of development – further investigation required	Ongoing
Marine mammals	Accidental contamination to marine mammals from vessels or devices		Industry best practice will be followed. Risk of contamination not deemed to be significant	Completed
Marine reptiles	Impact to marine reptiles	Based on existing reports	No records of reptiles in Orkney for 14 years, considered very rare and occasional visitor, therefore an interaction of marine reptiles with the proposed development is considered unlikely	Completed

Birds	Collision risk from underwater turbines (These data were collected in 2010 and cover alternate 2x2km blocks of sea around Orkney and the Pentland Firth)	Based on SPA studies	Survey and consultation will be required to establish abundance and distribution of species. However there is a general lack of understanding of the behaviour of seabirds in the vicinity of turbines and potential collision risks	Completed
Birds	Disturbance by vessel activity	Based on SPA studies	In order to assess this impact the extent and nature of seabird activity will need to be established. An increase in vessel activity will be most apparent during construction and installation works	Completed
Marine uses / users				
Other (can be named)				
<b>Reports and papers</b>	SSE Renewables . (2011). Westray South Tidal Array. <i>Environmental Scoping Report</i> . (Access Online: <a href="http://www.sse.com/uploadedFiles/Z_Microsites/Westray_South/Controls/Lists/Resources/WestraySouthScopingReportOctober2011.pdf">http://www.sse.com/uploadedFiles/Z_Microsites/Westray_South/Controls/Lists/Resources/WestraySouthScopingReportOctober2011.pdf</a> )			
<b>Research projects</b>	Past or on-going environmental research projects at the site			

## Monitoring and adaptive management

### General description

Receptor	Monitoring program	Design and methods	Results (brief description)	Status (planned,
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	<b>description including question and/or objective</b> (several can be listed per receptor)	(brief description)		underway, completed, with dates)
Commercial fisheries/Fishermen	Loss of access to fishing grounds	Inshore fishery study	Determine what use is made of key areas. Discuss with local fishers the implications of any disruption to any fishing activity. Establish the relative value of catch for the relevant areas through consultation with local fishermen and OFA.	Underway
Commercial fisheries/Fishermen	Disruption to regular fishing vessel transit routes	Inshore fishery study	Use sea-routing skills, AIS and VMS data to establish options for routing and consult with OFA, local fishermen and navigational experts on potential ways forward.	Underway
Archaeology	Physical disturbance of submerged historic and prehistoric land surfaces and archaeological finds	Desk reviews, reviews of bathymetric and geophysical data, stakeholder consultation	As far as possible determine presence of indefinable features within onshore cable corridor, assessing importance of features, assess potential for submerged features within development footprint, landfall(s) and offshore cable route	Underway
MoD	Potential disruption to existing MoD activity	Based on current military activity maps	There are no exercise areas in the vicinity of the AfL likely to be affected by the proposals. Therefore, no effect on existing activity is anticipated.	Completed
Benthos	Scour around devices and other subsea infrastructure (including mooring cables as result of movement with wave and tides)	To be determined following outcomes of desk based research, survey and consultation, will be considered when micro siting of devices.	To be determined following outcomes of desk based research, survey and consultation. Review footage taken during installation to validate predictions (operations will most likely be monitored)	Ongoing
Fish and fisheries	Effects on herring and sand eel populations	Based on current data	Determine the extent of herring and sand eel spawning/nursery	Ongoing

Large vertebrates				
Birds				
Marine uses/ users				
Other (can be named)				
<b>Reports and papers</b>	SSE Renewables . (2011). Westray South Tidal Array. <i>Environmental Scoping Report</i> . (Access Online: <a href="http://www.sse.com/uploadedFiles/Z_Microsites/Westray_South/Controls/Lists/Resources/WestraySouthScopingReportOctober2011.pdf">http://www.sse.com/uploadedFiles/Z_Microsites/Westray_South/Controls/Lists/Resources/WestraySouthScopingReportOctober2011.pdf</a> )			
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