

Costa Head Wave Energy Farm

Developer: Alstom and SSE Renewables

Site Size:

Covers an area of approximately 24km².

Site Location:

The Costa Head site is located in water depths of 60– 75m approximately 5km to the north of Orkney Mainland. Predominant swell direction is north westerly. The project could affect Birsay bay (7km) and Fisk Helliar (7km).

Technology:

Alstom and SSE Renewables have signed a new joint venture agreement to develop the Costa Head Wave Project, which would generate up to 200 megawatts (MW) of electricity from a site north of mainland Orkney. It is proposed that Phase 1 will be the installation of a 10 MW array comprising up to 4 wave energy converters, with Phase 2 potentially bringing the total installed capacity up to 200 MW. It is anticipated that the proposed Phase 2 array will occupy the majority of the 24 km². Overall the project could provide enough energy to power around 190,000 homes.

Plans are to install AWS-III wave energy converters at the proposed Costa Head Wave Farm. This technology is still under development; expected deployment of a full scale prototype is expected in 2014. The AWS-III is a toroidal (ring shaped), self-reacting, multi-cell, floating wave energy converter (WEC) that harnesses power from offshore sea waves to generate renewable electricity. A feature of the AWS-III technology is that there are no exposed moving parts in the water; this is expected to increase the operational life and reliability of the mechanical and electrical equipment and potentially reduce the environmental impact.

The wave energy converters will be attached to the seabed using moorings. Electrical infrastructure is required in order to transmit generated power to the end user, this will comprise inter array cabling between converters and export cabling to shore. It is intended that any offshore substation for Phase 2 of the proposed development would be installed within the (Area of Lease) AfL area.

There are currently a number of potential export cable landfall options identified for the Costa Head Wave Farm development that are being considered for each phase. The landfall location will be identified based on environmental, technical and economic criteria as part of the site design process.

Development Stage:

It is proposed that as a minimum, the necessary consent and licence applications to build Phase 1 and its supporting infrastructure will be submitted in Q3 2013. It is anticipated that the consent and licence applications for Phase 2 will subsequently be submitted in 2016.

Timeline:

Scoping Report: 10/ 05/2012

Scoping Opinion: 19/09/2012

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SAS traffic light system:

Surfers Against Sewage some concerns about this project. The proposed technology and infrastructure could have a significant impact on the local wave resource.

