RECHARGE
November 11 2013
By Brian Publicover

Fukushima floating wind switch-on

A Marubeni-led consortium brought another experimental offshore floating wind project online in Japan this week, and confirmed plans to add the first of two 7MW turbines at the site off the coast of Fukushima prefecture in the second half of 2014.

Fukushima prefectural governor Yuhei Sato (left) and METI vice minister Kazuyoshi Akaba face the media after remotely switching on the floating turbine from the port of Onahama, south of the city of Iwaki

At a press conference in Iwaki, Kazuyoshi Akaba, state minister of the Ministry of Economy, Trade and Industry (METI), joined Fukushima governor Yuhei Sato in officially turning on the 2MW Hitachi downwind machine.

Akaba, noting the many victims of the Fukushima Daiichi nuclear accident, joined Sato in hailing the project as a "symbol" of the region's ongoing recovery.

"The government is determined to make this successful," he told a packed room of reporters at Onahama port, south of the city of Iwaki and the crippled power plant.

Eiju Ono, chairman of the Iwaki Chamber of Commerce and Industry, echoed Akaba's comments, noting the many new jobs the project will potentially generate in Fukushima prefecture.

The turbine, situated roughly 20km off the nation's east coast, is anchored to the seabed 120 metres below by six 300-tonne chains. The compact semi-submersible machine is connected to a 66kV substation, mounted on an advanced-spar floating apparatus.

The consortium – which includes the University of Tokyo, Mitsubishi Heavy Industries (MHI), Mitsui & Co., Furukawa Electric and Nippon Steel & Sumitomo Metal – will connect the first of two of MHI's SeaAngel turbines to the floating substation by summer or autumn 2014, a Marubeni spokesperson told Recharge.

One of the 7MW machines will be mounted on an advanced-spar floating base, while the other will be placed on a V-shaped semi-submersible platform.

MHI plans to test a SeaAngel prototype at Scotland's Hunterston test centre.

The second phase of the Fukushima installation will continue through 2015. The turbine and substation that went online this week are the first phase of a ¥22bn, ($222.3m) three-year national demonstration project sponsored by METI.

Takeshi Ishihara, a professor in the University of Tokyo's civil engineering department who led the initial project concept, told Recharge that the floating turbine, undersea cables, and substation each accounted for roughly one-third of the total project costs.

Ishihara and the rest of the consortium see the potential to eventually scale the Fukushima project up to a 1GW installation involving more than 140 turbines by 2020.

The Fukushima substation's spar design, which extends more deeply into the water the turbine's semi-submersible platform, was particularly difficult to tow from port to sea.

This will pose a significant maintenance challenge in the future, necessitating the eventual development of a specialised vessel, said Kazuhiro Ookawara, a senior manager at consortium member Japan Marine United.

The METI-sponsored Fukushima initiative is one of two floating wind demonstration tests in Japan. Late last month, Japan's Ministry of the Environment switched on a 2MW Hitachi floating turbine off the coast of Nagasaki prefecture, as part of a ¥5bn, five-year demonstration project.