

ENVIRONMENTAL EFFECTS METADATA SURVEY FORM

Name of person updating the form

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Date submitted

July 26, 2012

Project name: Uldolmok Tidal Power Station

Planned In Operation Completed

Project description:

Project Developer: South Korea Ministry of Land, Transport, and Maritime Affairs

Technology Developer: Korea East West Power Co.

Technology type: Tidal barrage

Resource (wave, tidal): Tidal

Project scale (test site, prototype, array, commercial): Pilot plant

Installed capacity (MW): 1.5 MW (increasing to 90 MW in 2013)

Project Website:

Launch Date: May 14, 2009

Additional Description: The Uldolmok Strait experiences tidal water speeds that exceed 6.5 m/s with the width of the strait being approximately 300 m due to the average tidal range of 3 m over the entire channel and the tidal phase difference of 100 min between both ends. The water level difference through the Uldolmok Strait is 2 m. Gorlov triple helical turbines of 1 m diameter and 2.5 m length are used to collect cross-flow tidal fluctuations.

Location:

Ocean/Water body: The Uldolmok Strait

Closest city: Jindo Island, South Jeolla, South Korea

Country: South Korea

Coordinates: 34.56833°, 126.30778°

Process status: Korea East West Power Co. and South Jeolla Province signed an investment agreement in 2006 to develop a tidal plant in Jindo. Hyundai Construction & Engineering was chosen to construct a test power plant, while Hyundai Heavy Industries was named to develop generators and Iljin Electric was chosen to manufacture mechanical equipment.

The plant was commissioned in May 14, 2009 by the South Korean government. The plant cost 10 million USD and has an installed capacity of 1,000 KW (1 MW), generating 2.4 GWh annually, sufficient to meet the demand of 430 households. Additional 500 kW was commissioned in June 2011.

Licensing information (brief description): The Low Carbon Green Growth Basic Act (Feb 2009) and the Green Growth 5-Year Plan: Restructuring S&T R&D Policies (July 2009) were passed in hopes that “A national paradigm that aims to deal with the challenges of climate change while at the same time create jobs and restore growth by minimizing environmental degradation and carbon emissions.” By 2020, South Korea hopes to produce 5,377 GWh/yr from ocean renewable energy. This could reach 113,000 residents and reduce carbon dioxide emissions by 2.3 million tons.

Key Environmental issues: No studies have been conducted to analyze the direct environmental effects of the pilot turbines, much less the effects done one the project expands to the planned 90 MW stage two of development. However, the project will reduce reliance on greenhouse gases for energy in accordance with UNFCCC.

Environmental webpage: *link to project official environmental webpage (if available)*

Baseline studies and project effects studies: Uldolmok Tidal Power Station				
General description				
Receptor	Study description including question and/or objective (several can be listed per receptor)	Design and methods (brief description)	Results (brief description)	Status (planned, underway, completed, with dates)
Physical environment				
Benthos				
Fish and fisheries				
Large vertebrates				
Birds				
Marine uses / users				
Other* (can be named)				
Reports or Papers	Tidal Current Power Development in Korea			
Research	N/A			

Projects	
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Monitoring and adaptive management: Uldolmok Tidal Power Station				
General description				
Receptor	Monitoring program description including question and/or objective (several can be listed per receptor)	Design and methods (brief description)	Results (brief description)	Status (planned, underway, completed, with dates)
Physical environment				
Benthos				
Fish and fisheries				
Large vertebrates				
Birds				
Marine uses/ users				
Other* (can be named)				
Reports or Papers	(Key papers on the areas addressed should be listed here; when possible the files themselves can be made available in downloadable PDF format, alternatively links to the files or project website can be provided when available e.g. SeaGen.)			
Research Projects	(past or on-going environmental research projects at the site)			