

# Rheem LAB.

## [R&D and Demonstration of Ocean Renewable Energy]

Center for Integrated Underwater Observation Technology

Ocean Environmental Engineering

Dept. of Ocean Technology, Policy and Environment

Graduate School of Frontier Sciences

<https://seasat.iis.u-tokyo.ac.jp/rheem/>



### Kuji Wave Power Plant

Location : Tamanowaki fishing port in Kuji City, Iwate Pref.

Installation : September 8, 2016

Maximum Power : 43 kW (Wave Height 4 m)

Features : Hydraulic drive pendulum wave power generator (Wave-Rudder Type) based on a hydraulic steering system for large commercial vessels. Japan's first grid connected wave power generator

Kuji

### Sabusawa Tidal Current Power Plant

Location : Sabusawa Channel in Shiogama City, Miyagi Pref.

Operation Period : November 2014 – June 2019

Maximum Power : 5 kW (Current Speed 1.25 m/sec)

Features : The power from the two vertical axial current turbine axes is brought together using a hydraulic system to generate electricity. Each turbine axis has two-stage turbine blades having different phases. Japan's first grid connected tidal current power generator.

Shiogama



### Namie Wave Power Plant Project (2020 -)

Location : Ukedo in Namie Town, Fukushima Pref.

Maximum Power : 200 kW

Feature : Pre-commercial stage Wave Power Plant with two 100 kW wave energy converters installed in parallel

Namie



Hiratsuka

### Hiratsuka Wave Power Plant

Location : Hiratsuka Fishing Port in Hiratsuka City, Kanagawa Pref.

Installation : February 2020 - February 2022

Maximum Power : 45 kW (Wave Height 1.5 m)

Features : The second generation of the Wave-Rudder Type WEC with vertical layout ram-type hydraulic cylinders (VTC). The Wave-Rudder is composed of steel and rubber plates. The wave energy reflected by a wall is used in addition to the incident wave energy

