

RHEEM LAB.

Wave Power Generation and Regional Revitalization



Department of Mechanical and Biofunctional Systems
Center for Integrated Underwater Observation Technology

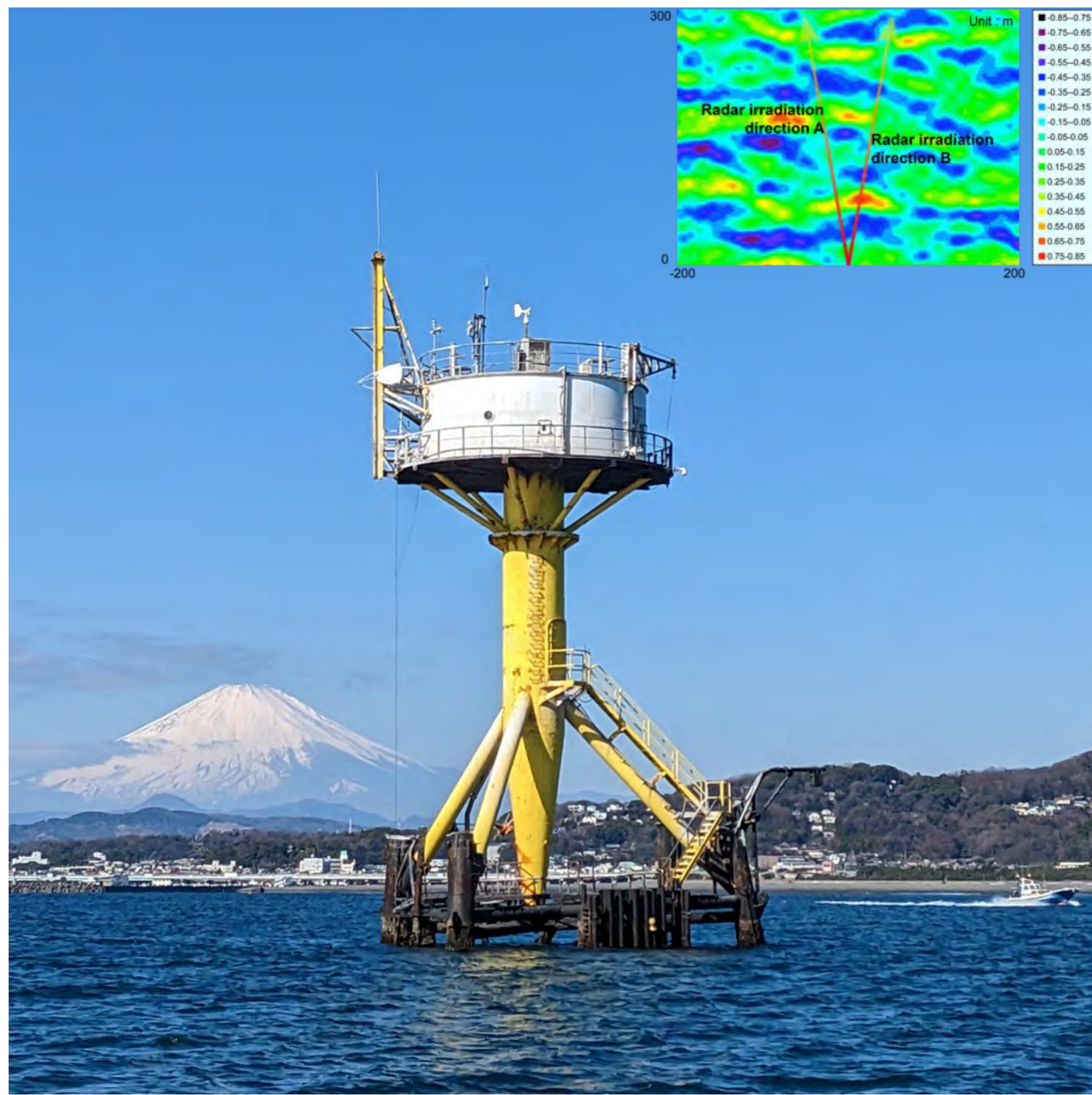
Ocean Environmental Engineering
Department of Ocean Technology, Policy and Environment, Graduate School of Frontier Sciences

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

Research, Development and Deployment of Wave Power Generation

We are researching and developing systems to observe the physical environment of the sea surface such as waves, sea surface wind, tsunami, tide level and sea ice by remote sensing using microwave pulse Doppler radar, and wave power generation systems using wave energy. These researches will contribute to the promotion of global warming countermeasures such as mitigation of global warming (development of energy sources that do not emit greenhouse gases) and adaptation to global warming (response to environmental changes and disasters caused by abnormal weather).

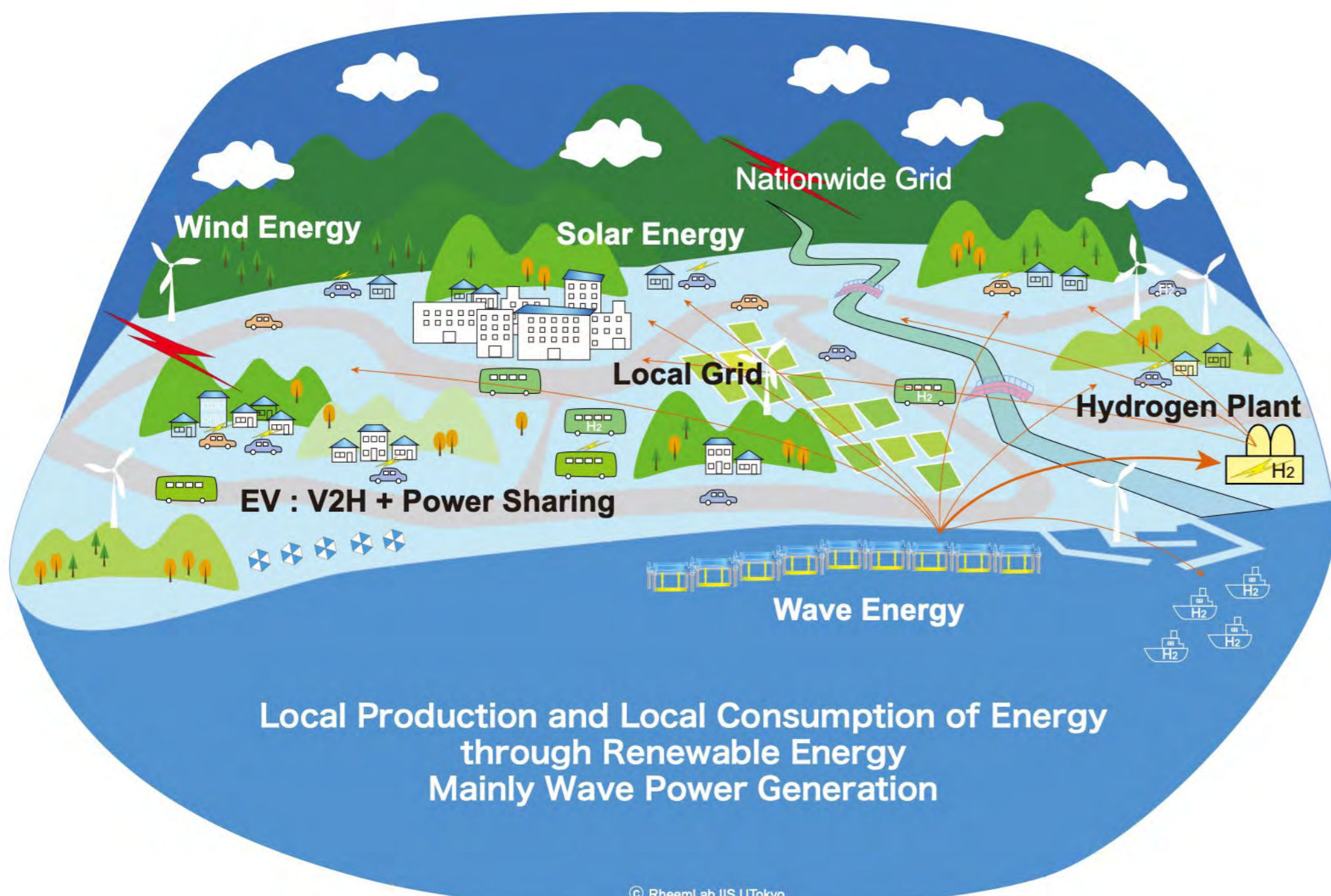
Hiratsuka Offshore Experimental Tower & Wave Radar



Development of Ocean Renewable Energy

- Kuji Wave Power Plant**
Location: Tamanowaki fishing port in Kuji City, Iwate Pref.
Operation Period: September 2016 - March 2022
Maximum Power: 43 kW (Wave Height 4 m)
Features: Hydraulic drive pendulum type wave power generator based on a hydraulic steering system of commercial vessel
- 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: Two vertical axes, two-stage turbine blades with different phase
- Japan Sea Wave Power Plant**
Consideration of commercialization
- Namie Wave Power Plant**
Development of a wave power generation farm with a view to practical application (2MW)
- Hiratsuka Wave Power Plant II**
Objective: Formation of base for research and development and human resource development
Features: New ocean usage model based on the corporate version hometown tax payments
- Hiratsuka Wave Power Plant**
Location: Hiratsuka Fishing Port in Hiratsuka City, Kanagawa Pref.
Operation Period: February 2020 - February 2022
Maximum Power: 45 kW (Wave Height 1.5 m)
Features: Vertical layout ram-type hydraulic cylinders (VTC)
- Enshu-Nada Wave Power Plant**
Consideration of commercialization

Local Energy Production and Consumption Model using Renewable Energy



Proposal of an Ocean Renewable Energy usage Model using the Corporate version of Hometown Tax Payment

