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The world's oceans provide two forms of energy powered by the sun: (1) Thermal energy: offshore wind and ocean thermal/OTEC; and (2) mechanical energy: waves, currents and tides. Only OTEC, currents and tides are consistent and predictable 24/7.

OCEAN CURRENTS

One of six 36 kW current turbines being installed by Verdant Power in NYC's East River in 2007.

"Ocean currents can provide vast potential for power generation - some are five times as energy-dense as the world's best wind power sites." - Florida Atlantic University's Center of Excellence in Ocean Energy

WAVE ENERGY

Ocean Power Delivery's Pelamis wave device operating today off Portugal's coast.

"The total power of waves breaking on the world's coastlines is estimated at 2 to 3 million megawatts. Each day the oceans absorb enough heat from the sun to equal the thermal energy contained in 250 billion barrels of oil." - DOE's Energy Efficiency and Renewable Energy website

OFFSHORE WIND

A wind farm operating today off Denmark's coast installed by Vestas Corporation.

"Today wind power provides 20% of Danish electricity consumption; it is to increase to 50% by 2025, mostly offshore." - Denmark Ministry for Transport and Energy

OTEC ENERGY

An OTEC facility on Keahole Point, Hawaii produced 50,000 watts in 1993 outpacing a Japanese system's 40,000 watts in 1982.

"The U.S. Department of Energy concluded in 1976 that OTEC could produce twenty million kilowatts by the year 2000, an amount three-and-a-half times the U.S. energy demand." - U.S. Department of Energy

TIDAL ENERGY

The world's largest tidal power plant is now under construction today off South Korea's west coast.

"The Rance (France) Tidal Power Plant has operated for over 30 years without major incidents or breakdowns for 160,000 hours and has generated 16 billion kWh at a price lower than our non-tidal generation costs." - Electricite de France (The French Government's Electric Utility)

Areas highlighted above indicate locations of major ocean energy activities today.

To learn more about the various types of ocean energy, visit www.oceanenergycouncil.com

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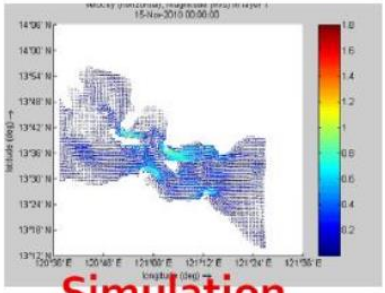
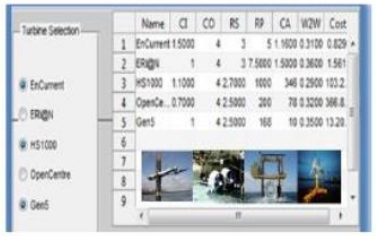
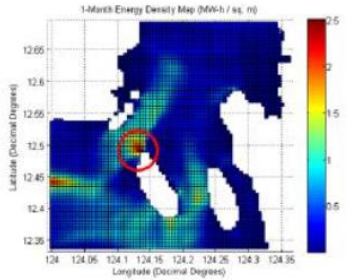
Making Marine Renewable Energy Happen in SEA!

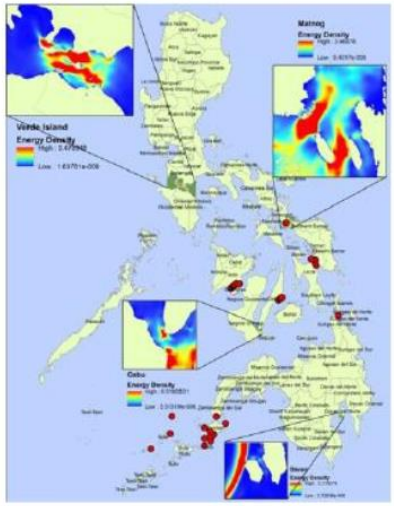
OceanPixel is a Singapore start-up company that spun off from the Nanyang Technological University's (NTU) Energy Research Institute. OP is currently engaged in ocean energy projects in Singapore, Indonesia, and the Philippines

With OceanPixel's capabilities, we provide *Multi-Site, Multi-Device, Multi-Criteria GIS Decision Approach* to project development.









- **Resource Data**
  - ◊ Integration
  - ◊ Processing
  - ◊ Analysis
- **Device Database**
  - ◊ Mechanical Specs
  - ◊ Electrical Specs
  - ◊ Cost
- **Installation**
  - ◊ Distance to Port
  - ◊ Distance to Shore (Grid)
- **Constraints**
  - ◊ Navigation & Shipping
  - ◊ Marine Protected Areas
  - ◊ Depth Constraints
- **Suitability Scoring**
  - ◊ "Best Site" Nomination
  - ◊ "Best Technology"
  - ◊ "Best Device"
  - ◊ Least Cost Analysis

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Energy Research Institute @ NTU

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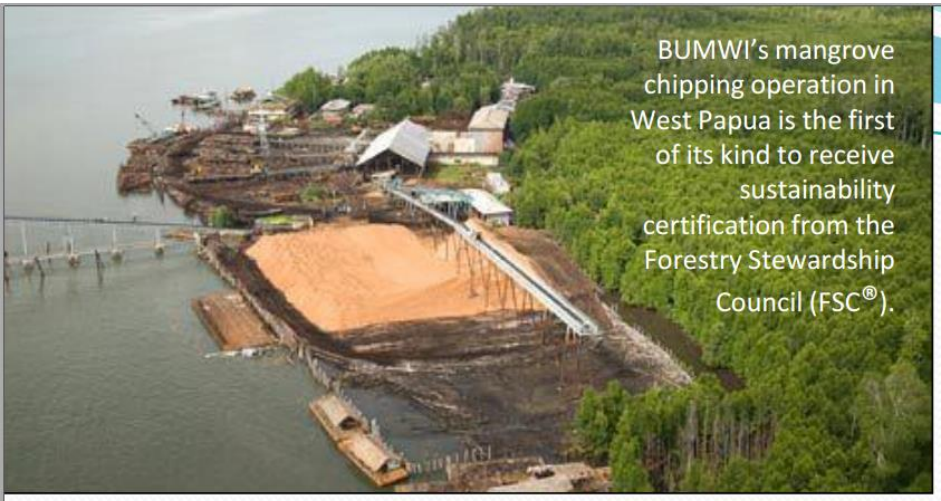
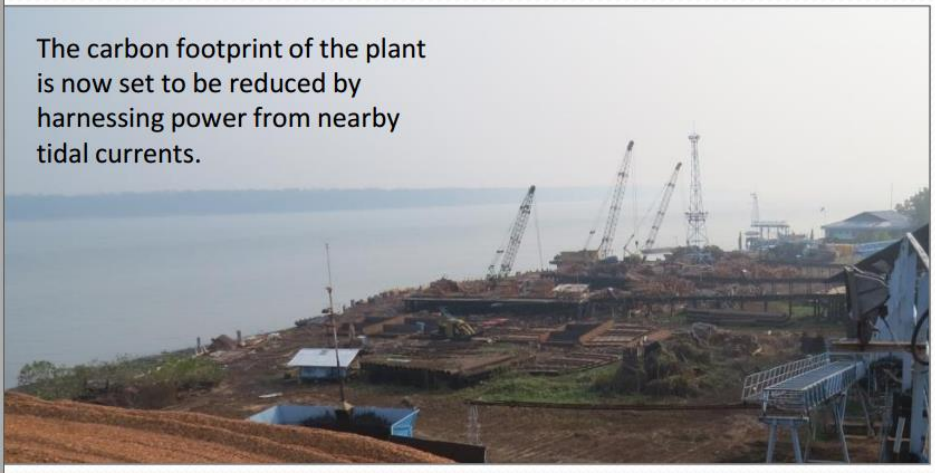
EXCEEDENCE
MAKING RENEWABLES COMMERCIAL

Open Ocean
Marine Data Intelligence

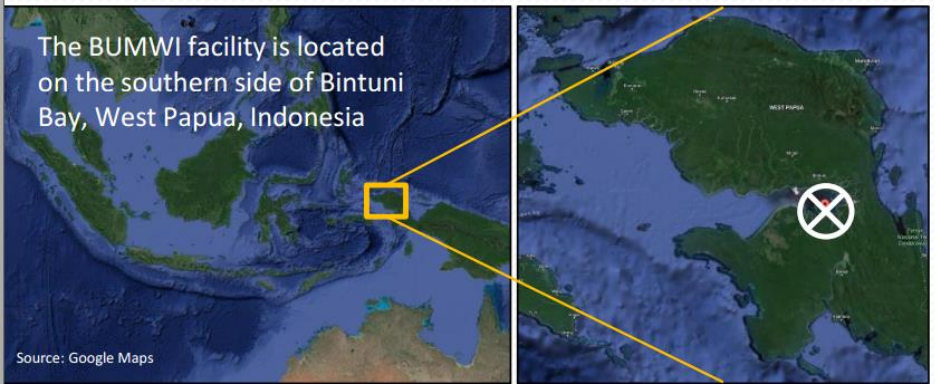
seacore
southeast asian collaboration for ocean renewable energy



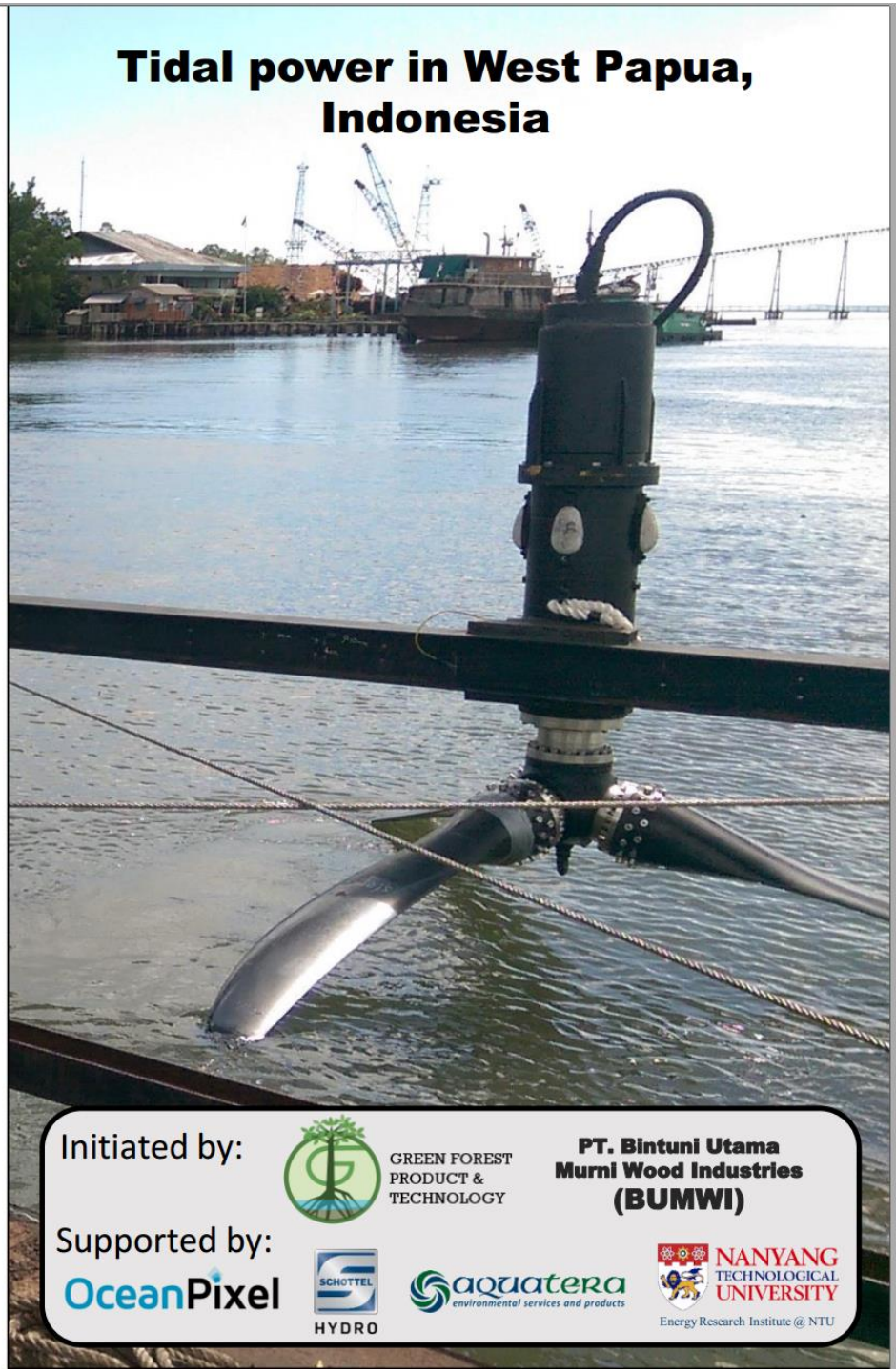
BUMWI's mangrove chipping operation in West Papua is the first of its kind to receive sustainability certification from the Forestry Stewardship Council (FSC®).



The carbon footprint of the plant is now set to be reduced by harnessing power from nearby tidal currents.



Tidal power in West Papua, Indonesia



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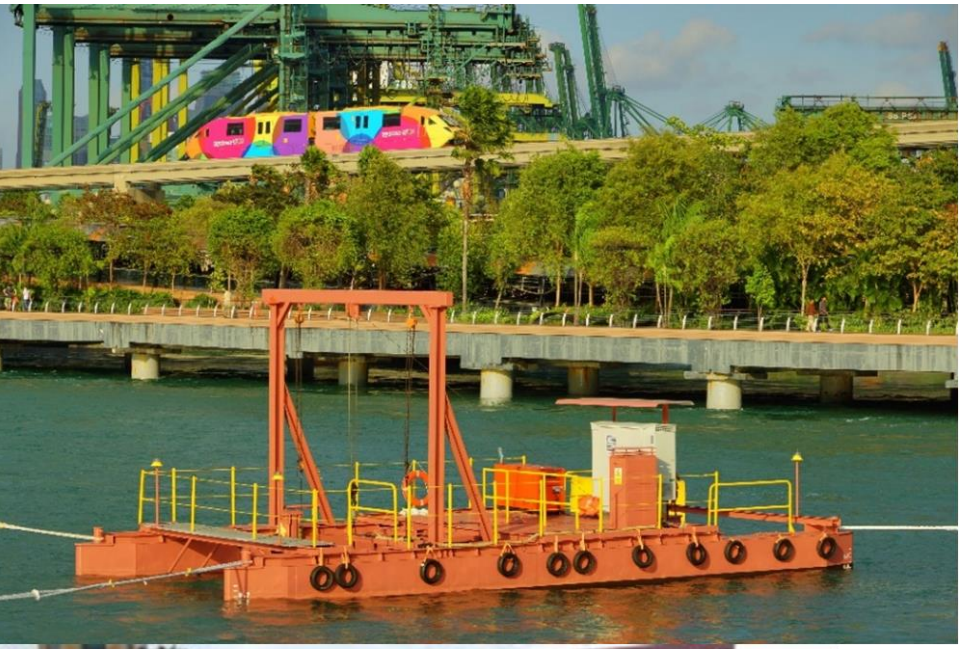
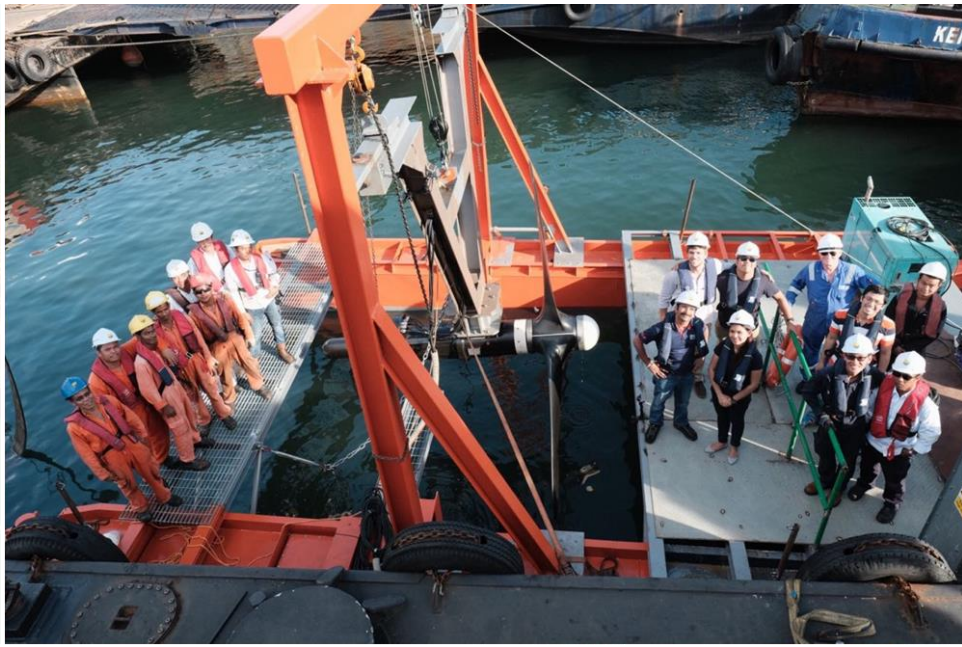


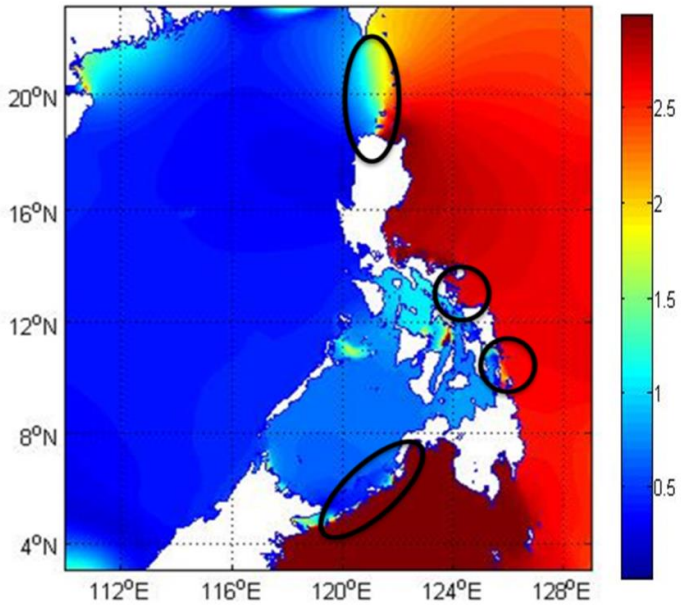


Tidal Current

Ocean Thermal

Wave

Philippine Ocean Energy Potential: 170,000 MW



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