

**OTEC LAB, AN EXPERIMENTAL PLATFORM DEDICATED TO THE OPTIMIZATION OF BARDOT'S OTEC SYSTEM**

**➔ PURPOSE**

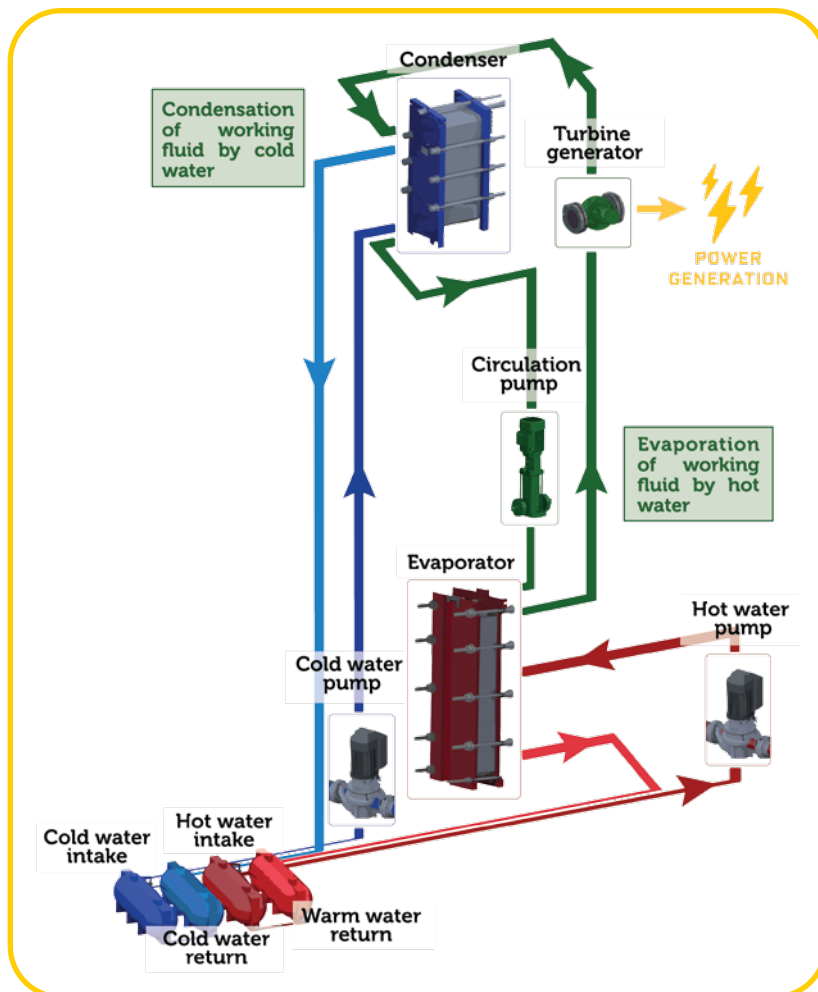
BARDOT's OTEC Lab is a full-scale simulator built to model and optimize the productivity of the OTEC system developed by BARDOT Ocean.

Its purpose is to establish the best setup that maximizes the efficiency of an OTEC system by incorporating detailed studies of your site's environmental and technical data.

The results obtained can then be used to support a personalized feasibility study.



**➔ PROCESS**



The variables that affect OTEC efficiency include water velocity, temperature gradient, working fluid flow rate and turbine working range. For each of them, a series of data is run by the OTEC Lab.

Once the data is entered, the OTEC Lab runs a full-scale simulation of your OTEC system by recreating the specified conditions. The water stored in large tanks is brought to the requested temperature and the different variables are adjusted through the central control system.

The OTEC Lab provides immediate results and gives the best combination leading to maximum power generation.

## ➔ CHARACTERISTICS

- Organic Rankine Cycle (ORC) System
- Turbine: 10kW radial hermetic turbo-generator
- Cold water pump: 40m<sup>3</sup>/h flow rate
- Hot water pump: 80m<sup>3</sup>/h flow rate
- Circulation pump: pumps the working fluid into the evaporator
- Water tanks: hot and cold water tanks large capacity

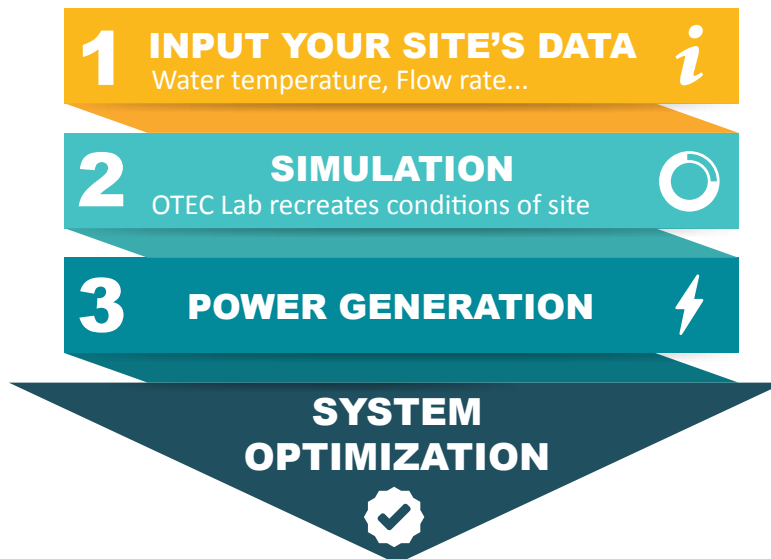


## ➔ TEST CAPACITY

- Multiple turbine design
- Multiple heat exchanger design
- Turbine Working Range
- Test duration from 20min up to 2h30
- Variation of mixing flow ratio, temperature delta, cooling fluid
- Flow controllers and HMI interfaces, motor control

## ➔ OUTPUT

- Turbine efficiency, Press loss, Flow data, Temperature
- Optimization of the turbine speed (heat/power conversion)
- Security system
- Control actuators
- FTP and supervision Link
- System monitoring from our office



Test your OTEC project feasibility in real conditions at:



**OTEC Lab**

*BARDOT Engineering & Development Center  
844 Voie Antiope  
13600 La Ciotat  
France*