

PRE-FEASIBILITY STUDY FOR THE CONSTRUCTION OF OWC PLANTS USING "GIAR" TECHNOLOGY FOR THE GENERATION OF RENEWABLE ENERGY FROM WAVE MOTION IN AN ECOPORT

GIAR Energy Srl B.C. –

International Patent No. PCT/EP/2013/002653 dated 09/11/2016

Contract GIAR Energy Srl B.C. – dated/...../.....

EcoPort Length [m]	400,00
Oscillating Chambers Dimensions (l x w x h) [m]	4,0 x 3,0 x 7,0
Number of Turbines [n.]	100

Inventor: Giuseppe D'Ambrosio

Design Engineer: Benedetto D'Ambrosio

Technical Report

The project consists of an innovative system for the generation of electricity from an OWC plant using oscillating chambers located at EcoPorts for the exploitation of wave energy. The system consists of a series of rotors (turbines) mounted side by side (towards whom the air compressed by the oscillating chambers is channelled), which transform the kinetic energy of the air into mechanical energy available at the axis of the rotor.

The Variable Displacement feature of the GIAR Turbine allows the exploitation of the wave motion with waves of various heights, always guaranteeing very high yields by achieving the resonance conditions between the frequency of the waves and the oscillation period of the OWC oscillating chambers.

The system is equipped with safety valves that are activated automatically in the event of strong storms.

Figure I: GIAR Turbine application for the production of energy from wave motion

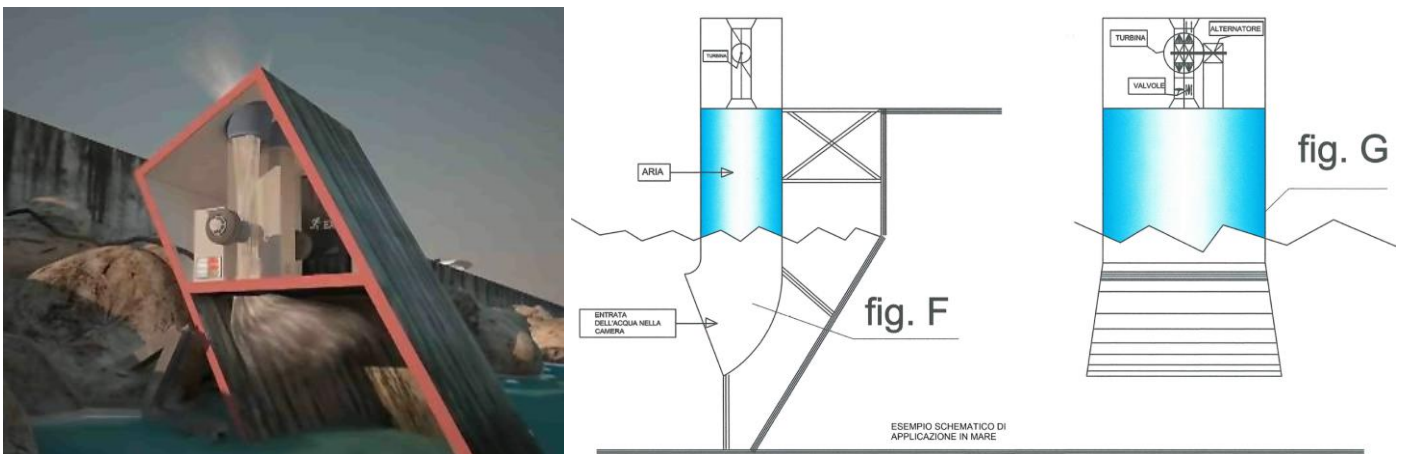
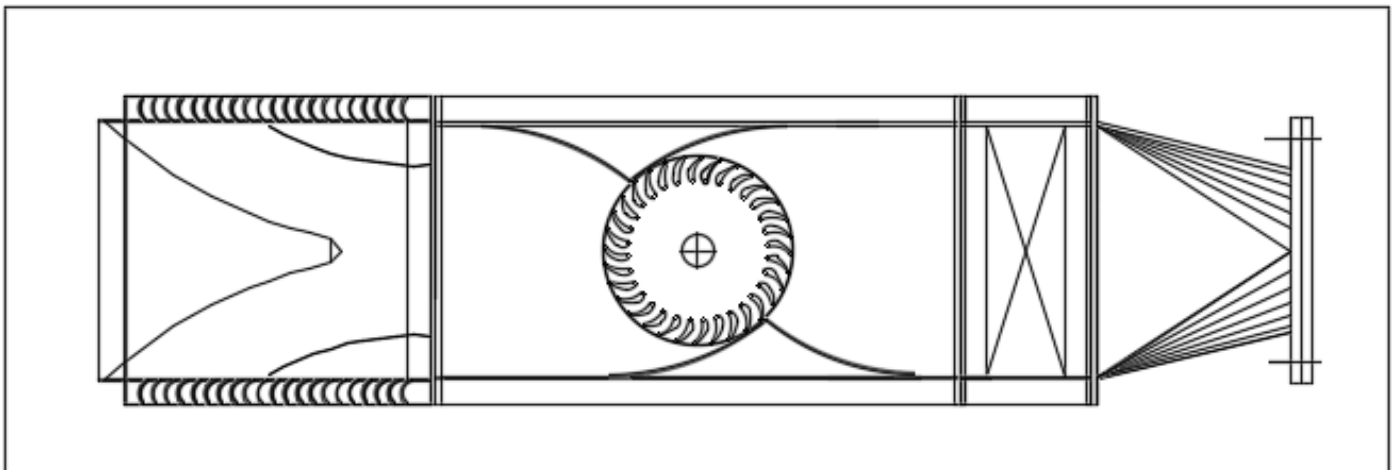


Figure II: GIAR Turbine application for the production of energy from wave motion



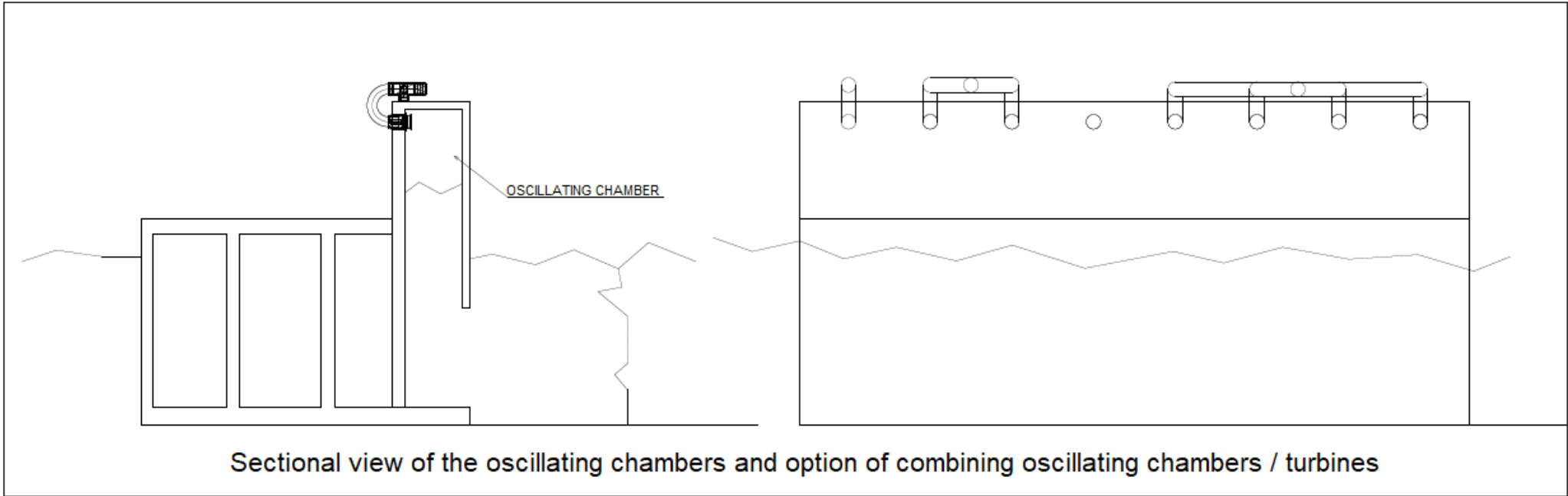


Figure 1: Sectional view 1

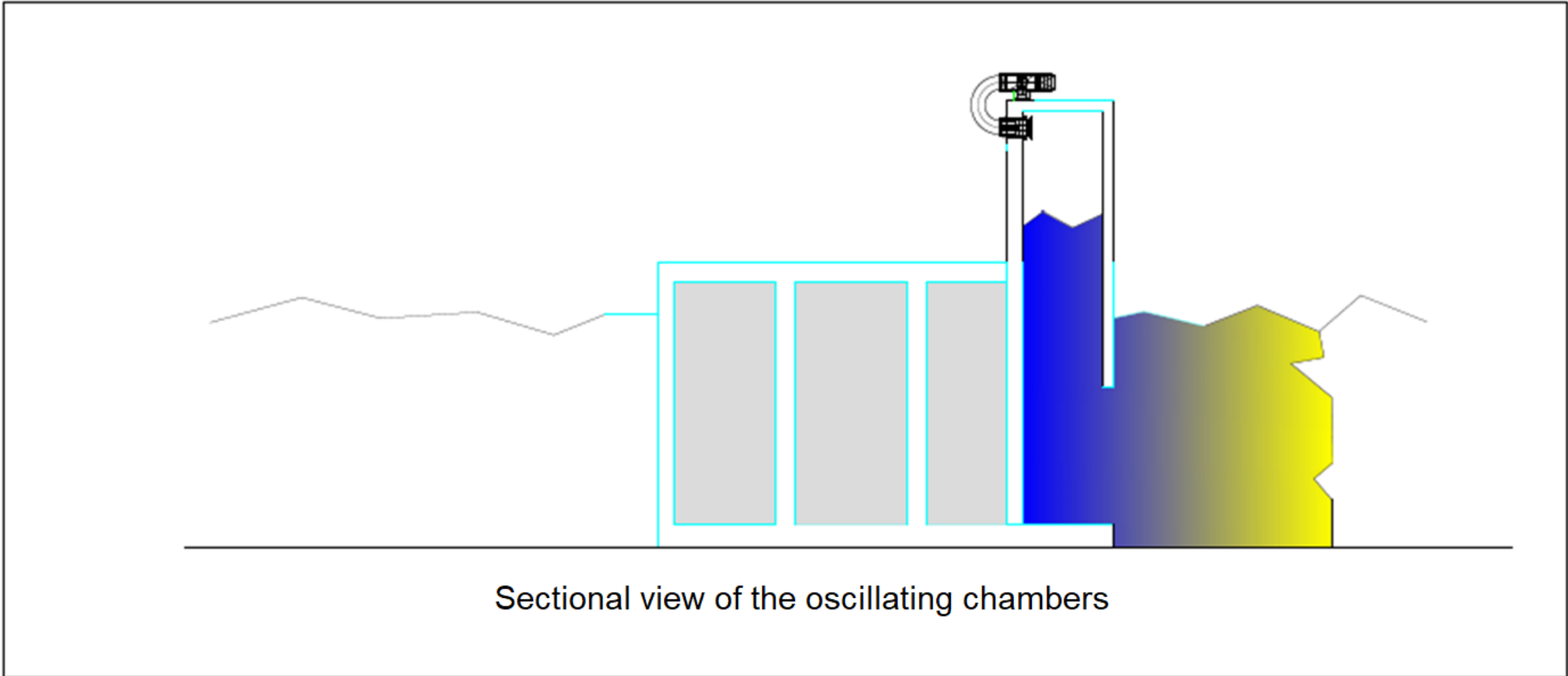
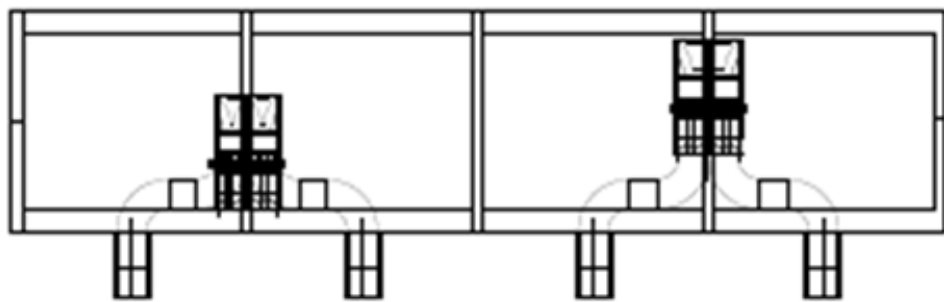
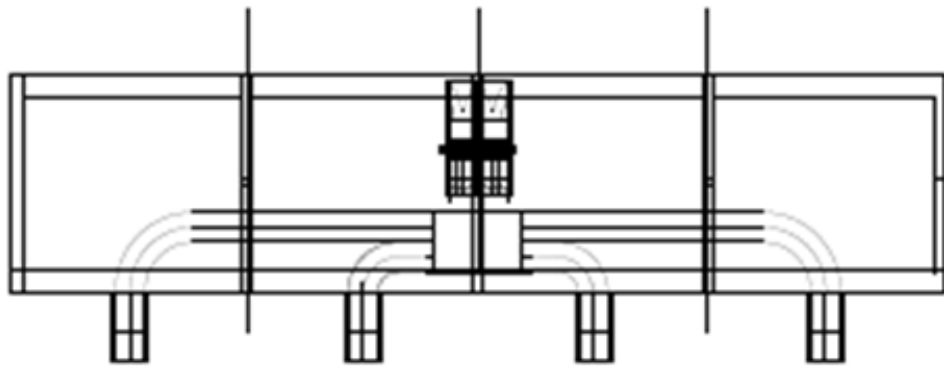
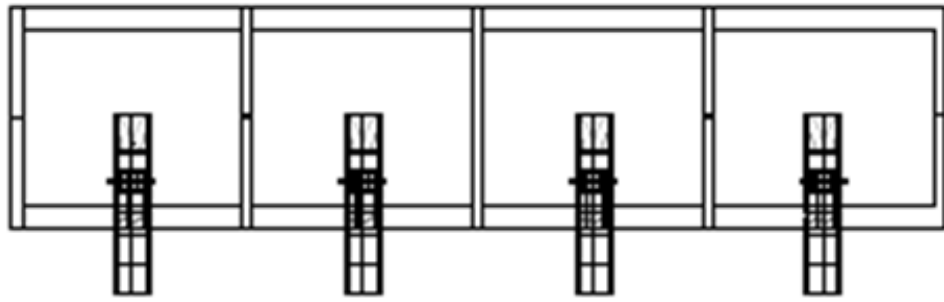


Figure 2: Sectional view 2



Top view:
Option of combining
oscillating chambers / turbines

Figure 3: Top view