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(57) Abstract :
TITLE: Method, System and Apparatus for Floating Breakwater Integrated Wave-Energy Power Generation ABSTRACT A system (101) for generating electrical energy from a wave-energy comprising: a fixed floating breakwater unit (FBW) (10) with a float chamber, a plurality of wave-energy converting devices (14) coupled to the fixed floating breakwater unit (FBW) (10) by plurality of power take-off shafts (PTO-S) (12), a plurality of attenuators interconnecting the plurality of wave-energy converting devices (14) to form an array of wave-energy converting devices (14A through 14C), a Maxwell wheel generator (1) to convert a pitch motion of an incoming ocean wave (17) into mechanical energy, a U-shaped oscillating water column (UOWC) (7) to convert a lateral and vertical movement of a liquid (15a) into mechanical energy, a horizontal axis oscillating water column (HOWC) (9) to convert a surge and pitch motion of the incoming waves (17) into an electrical energy, and a plurality of electric generators (5) to convert the mechanical energy into electrical energy, wherein the array of wave-energy converting devices (14A through 14C) harnesses the wave-energy from incoming ocean waves (17) into the electrical energy in all three degrees of motion (204) namely heave, surge and pitch motions besides protecting the FBW (10) in all climatic conditions.

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