

46ESS-52: Tidal/Wave Turbines

FRANCESCO DE BOSIO

Tidal and Wave technologies have the potential to play a crucial role in the future development of the renewable energy, although they still are under a testing phase. In this panel, I am going to describe the state of the art of these technologies investigating different devices for the energy recovery. Firstly, I am going to analyse in detail the different configurations of turbines used in both Wave and Tidal technologies. For instance, oscillating water column and terminator device for the former and horizontal, vertical axis and enclosed tips turbines for the latter. Secondly, I am going to describe diverse arrays of tidal turbines, such as Tocado Power Plant and Schottel Hydro Triton S. Thirdly, I am going to investigate the most significant issues related with these technologies - i.e. interaction between tidal wakes and propagation across the array and how to cope with the bidirectional flow, along with the environmental impact – and present some interesting solutions that have been adopted. Finally, I am going to describe the future targets in terms of efficiency and amount of energy extracted by the flow.