

Renewable Energy Sources from the Ocean and their Integration in the Electrical Grid

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Abstract

In an effort to meet the target for CO₂ reduction, onshore renewables have been seen as the solution. In reality, onshore renewables like onshore wind and solar PV has presented a huge growth in the last years. However, there are some countries, in which this high growth starts to become no longer possible. Thus, for countries with large maritime coasts, the solution can be the use of the offshore renewable energies. Although offshore energy harvesting, especially associated to offshore wind generators with fixed foundation have been implemented in large scale, this is still limited to some countries that have conditions for this kind of implementation. In this talk, we will look at the renewable energy sources from the ocean and their integration in the electrical grid. It will be given emphasis to the offshore wind energy and wave energy. Regarding the offshore wind energy, it will be addressed new developments regarding floating offshore wind turbines. It also will be focused the technology associated to these systems, as well as, their integration into the electrical grid. Additionally, various solutions for wave energy will also be addressed. Some developments concerning electrical machines for these systems will also be presented..