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## CONCEPTS IN WAVE ENERGY CONVERSION: THE SEA TITAN EU-Funded PROJECT

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Wave energy conversion is a promising alternative to produce clean energy from the huge available resource at sea, but it is also a challenging mission because extraction conditions are difficult due to the harsh environment and also to the low frequency of the energy conversion process. In the Ocean Energy Strategic Roadmap was estimated that 100GW of ocean energy capacity could be deployed in Europe by 2050, producing around 350TWh of electricity meeting up to 10 % of Europe's demand by 2050. For this target to be attained it is essential the development of wave energy converters and specifically of its Power Take-Off (PTO), as one of the key technological priorities to increase the reliability and performance of ocean energy devices. During the session, the main concepts underlying the conversion of wave energy into electricity will be explained as well as the description of the SEA TITAN EU-funded project to develop a new type of Power Take-Off with improved performances.

The CIEMAT (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas) is a public research body assigned to the Ministry of Science, Innovation and Universities under the General Secretariat for Scientific Policy Coordination focusing on energy and environment and the technologies related to them. It has offices in several different regions of Spain, and its activity is structured around projects which form a bridge between R&D&I and social interest goals.

Dr. Luis GARCIA TABARES started his professional activity working on Power Electronics and Systems for high-speed trains. Later he started to work in applied superconductivity and particularly in superconducting magnets for Particle Accelerators. He currently leads the Electrical Engineering Division at CIEMAT with two core activities: Energy Generation and Storage (which includes wave energy generation) and Particle Accelerators, including compact accelerators for medical applications. He has been lecturing Electrical Machines for more than 10 years at the Universidad Pontificia de Comillas.

(credit: CIEMAT and L. Tabares Garcia)

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