

# **CLIMATE CHANGE EFFECTS AND THE EU TARGETS IN TERMS OF MARINE RENEWABLE ENERGY**

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The climate dynamics noticed in the last decades indicates without any doubt that climate change is a reality and that the global configuration of the environmental matrix might suffer in the future significant modifications. This evolution raises serious concerns from both the scientific community and the international environmental organizations. From this perspective, the presentation proposed herewith describes first briefly the most recent climate scenarios developed in the framework of the Sixth Assessment Report (AR6) by IPCC, the Intergovernmental Panel on Climate Change, which is the United Nations body for assessing the science related to climate change. In this report a new holistic concept is introduced. This is SSP (Shared Socioeconomic Pathway), which is complementary with the previous RCP (Representative Concentration Pathway). According to these new projections, even more dramatic scenarios than those foreseen in the Fifth Assessment Report (AR5) are possible whether effective and urgent measures are not globally taken. In this context, the European Union developed a very coherent strategy for a low carbon future. Thus the European Green Deal, published in December 2019, presents a roadmap for making the EU's economy sustainable by turning climate and environmental challenges into opportunities across all policy area. Furthermore, the European Green Deal provides an action plan to boost the efficient use of resources by moving to a clean, circular economy and to restore biodiversity and cut pollution. As regards the energy policy, an important target is represented by the Marine Renewable Energy, which is seen as the most promising resource that should be considered in the next decades. Thus, in relationship with the offshore wind, which is already well developed in the last two decades, an increase of 25 times is planned in 2050 with respect to 2021. As regards, the other sources of ocean energy, there are really huge expectations, since the target is an increase of the operational capacity more than 3000 times in 2050 in relationship with 2021. Such developments imply, of course, both large geographical expansion and high technological advances. In this context, the presentation focuses on two important aspects. These are: the expected evolution in the next decades of the marine energy resources, and a description of the most significant technologies existent at this moment for extracting marine renewable energy, as well as the expected advance of these technologies.