

EUROfusion: Implementation of activities described in the Roadmap to Fusion during Horizon

Description

A Roadmap to the realization of fusion energy was adopted by the EFDA system at the end of 2012. The roadmap aims at achieving all the necessary know-how to start the construction of a demonstration power plant (DEMO) by 2030, in order to reach the goal of fusion electricity in the grid by 2050. The roadmap has been articulated in eight different Missions. The present proposal has the goal of implementing the activities described in the Roadmap during Horizon 2020 through a joint programme of the members of the EUROfusion Consortium. ITER is the key facility in the roadmap. Thus, ITER success remains the most important overarching objective of the programme and, in the present proposal the vast majority of resources in Horizon 2020 are devoted to ensure that ITER is built within scope, time and budget; its operation is properly prepared; and a new generation of scientists and engineers is properly educated (at undergraduate and PhD level) and trained (at postdoctoral level) for its exploitation. DEMO is the only step between ITER and a commercial fusion power plant.

To achieve the goal of fusion electricity demonstration by 2050, DEMO construction has to begin in the early 2030s at the latest, to allow the start of operation in the early 2040s. DEMO cannot be defined and designed by research laboratories alone, but requires the full involvement of industry in all technological and systems aspects of the design. Specific provisions for the involvement of industry in the Consortium activities are envisaged.

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