

Energetics and Nuclear Fusion

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ITER (in Latin “the way”) is designed to demonstrate the scientific and technological feasibility of fusion energy on an industrial scale. The principal goal of ITER is to generate 500 megawatts of fusion power for periods of 300 to 500 seconds with a fusion power multiplication factor of at least 10. The technical challenges of the project will be discussed together with the accompanying development program for the major components.

The ITER Organization was officially established in Cadarache, France, on 24 October 2007. The seven members engaged in the project –China, the European Union, India, Japan, Korea, Russia and the United States – represent more than half the world’s population. The costs for ITER, which are shared by the seven members, include a construction cost of approximately 5.5 billion Euros, with a similar amount foreseen for the twenty-five-year phase covering operation and the subsequent decommissioning. The status of the build up of the organizations will be discussed.

Since the establishment of the organization, the team in Cadarache and the supporting Domestic Agencies from each Member that have been created to deliver 90 % of the ITER hardware on an “In-Kind”basis, have executed a basic design review. Several changes, some major, have been incorporated in the present baseline as a result of this design review.

The present status of the construction project will also be presented. Many of the agreements between the ITER Organization and the Domestic Agencies have been signed, and active construction of superconducting strands, cables and other subsystems is underway, together with the supporting R&D necessary to ensure maximum performance. Preparation of the site and of the itinerary to transport heavy components to the site is essentially complete. Planning of building construction has reached a very mature state and preparatory excavations will commence soon.

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