

The ITER Project

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Introduction

The long-term objective of fusion research is to harness the nuclear energy provided by the fusion of light atoms to help meet mankind's future energy needs. This research, which is carried out by scientists from all over the world, has made tremendous progress over the last decades. The fusion community is now ready to take the next step, and have together designed the international ITER experiment. The aim of ITER is to show fusion could be used to generate electrical power, and to gain the necessary data to design and operate the first electricity-producing plant.

In ITER, scientists will study plasmas in conditions similar to those expected in a electricity-generating fusion power plant. It will generate 500 MW of fusion power for extended periods of time, ten times more than the energy input needed to keep the plasma at the right temperature. It will therefore be the first fusion experiment to produce net power. It will also test a number of key technologies, including the heating, control, diagnostic and remote maintenance that will be needed for a real fusion power station.

The current participants to the project are the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA.

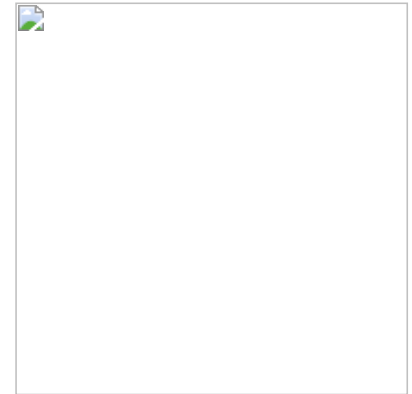


Figure 1: The ITER machine. The man in the bottom shows the scale.

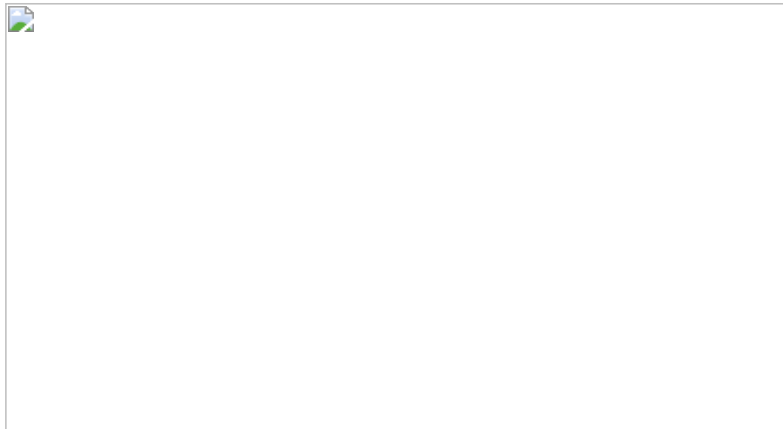


Figure 2: Countries participating in the ITER project.

The construction costs of ITER are estimated at five billion Euro over 10 years, and another five billion Euros are foreseen for the 20-year operation period. The contributions of the ITER Parties will for the largest part consist of components for the machine, so-called in kind contributions.