

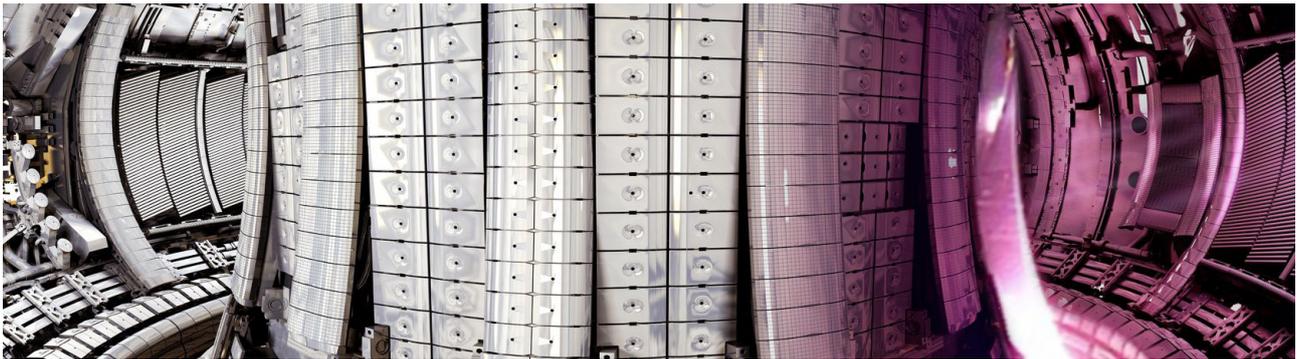


# The ITER project

## The road to fusion

### Pioneering fusion research

The beginning of fusion technology is hard to define, but **a famous experiment from 1934 opened the way to present-day fusion research**, including ITER. In a laboratory in Europe, researchers achieved fusion by using deuterium, a heavy version of hydrogen, discovering that this reaction released energy. By the 1950's, researchers all over the world were working on how to achieve fusion on earth in a way that could produce energy at a large scale.



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### European fusion strategy

Fusion was already listed as a research objective in the Euratom Treaty from 1957, and fusion research has since been coordinated to ensure that breakthroughs and results push forward the technology. European laboratories collaborate on fusion research through a pan-European consortium called EUROfusion, with 30 members in 28 countries. It is funded partly by the EU through the Euratom research and training programme, and partly by its members.

**European fusion research follows a long-term strategy** set out in the European research roadmap. Specifically, it outlines the general path for achieving fusion energy on the grid in the second half of the century.

### Advancing fusion for the future

The birth of ITER is also hard to identify, but the summit between US President Ronald Reagan and the Soviet Union's General Secretary Mikhail Gorbachev in Geneva 1985 was an important milestone. At that meeting, Gorbachev proposed **to set up an international cooperation to develop fusion energy** for peaceful purposes, which would later develop into ITER.

ITER's goal is **to prove that a fusion plasma can produce 10 times the thermal power injected into the plasma**.

ITER will be a purely experimental facility that will not produce electricity; however, the fusion device that will follow it, DEMO, will aim to model a real fusion plant and produce electricity from the fusion energy generated. The preliminary work for DEMO is already taking place, informed by the construction experience of ITER. DEMO is expected **to lead to commercial fusion power plants** to produce energy.