



the way to new energy

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**The Tokamak**

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**External Systems**

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## Power Supply

**Electricity requirements** for the ITER plant and facilities will range from 110 MW to up to 620 MW for peak periods of 30 seconds during plasma operation. Power will be provided through the 400 kV circuit that already supplies the nearby CEA Cadarache site—a one-kilometre extension will be enough to link the ITER plant into the network.

ITER will have a steady state distribution system to supply the electricity needed to operate the entire plant, including offices and the operational facilities. The **cooling water** and **cryogenic** systems will together absorb about 80% of this supply.

A second pulsed power system will be used during plasma operation to provide the superconducting **magnet** coils and the **heating** and current drive systems with the large amount of power that they need. Electricity from the 400 kV circuit will be transformed to an intermediate level (69 kV) via 3 step-down transformers.

Emergency backup power for the ITER plant and facilities will be covered by two diesel generators.



The ITER power converter prototype tested in 1998.