

Building the ITER Fusion Power Generator

by Dr. Michael Walsh, ITER Organization, Cadarache, France

The world requires a long-term power source that can operate on demand and produce large amounts of energy. Fusion power has the potential to meet this need. ITER is a large-scale experimental device under construction to demonstrate the feasibility of controlled fusion power on Earth. Located in Provence, France, ITER is an international collaboration involving more than 30 countries and is progressing steadily toward its goals. This talk will provide an overview of ITER's design, its current status, and the key technologies that underpin its development. Attendees will gain insight into the project's progress and upcoming milestones. Some critical technologies, such as the superconducting magnetic systems, are already developed and under installation, while others remain in various stages of development.

A crucial component of ITER is its measurement and control systems. Diagnostics play a vital role in real-time monitoring, providing feedback to control actuators that sustain and regulate plasmas over extended periods.

The speaker



Michael Walsh is an Irish engineer specializing in fusion energy. He is currently the Head of Fusion Technology and Instrumentation & Control (I&C) at ITER. Previously, he led the Diagnostics Division, overseeing plasma measurement systems. Walsh studied Electrical Engineering and Microelectronics at University College Cork. He earned a PhD in ion transport and diagnostics at the Culham Science Centre, UK. Before ITER, he worked on JET, MAST, and START fusion projects in the UK. Since joining ITER in 2009, he has driven collaboration and technical innovation. His work ensures accurate data collection for ITER's burning plasma research. He believes in a "one-team" approach to achieve ITER's fusion energy goals. Outside of work, he enjoys skiing, hiking, reading, and holds a black belt in judo.

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Room U1-07 "Aula Marchetti"