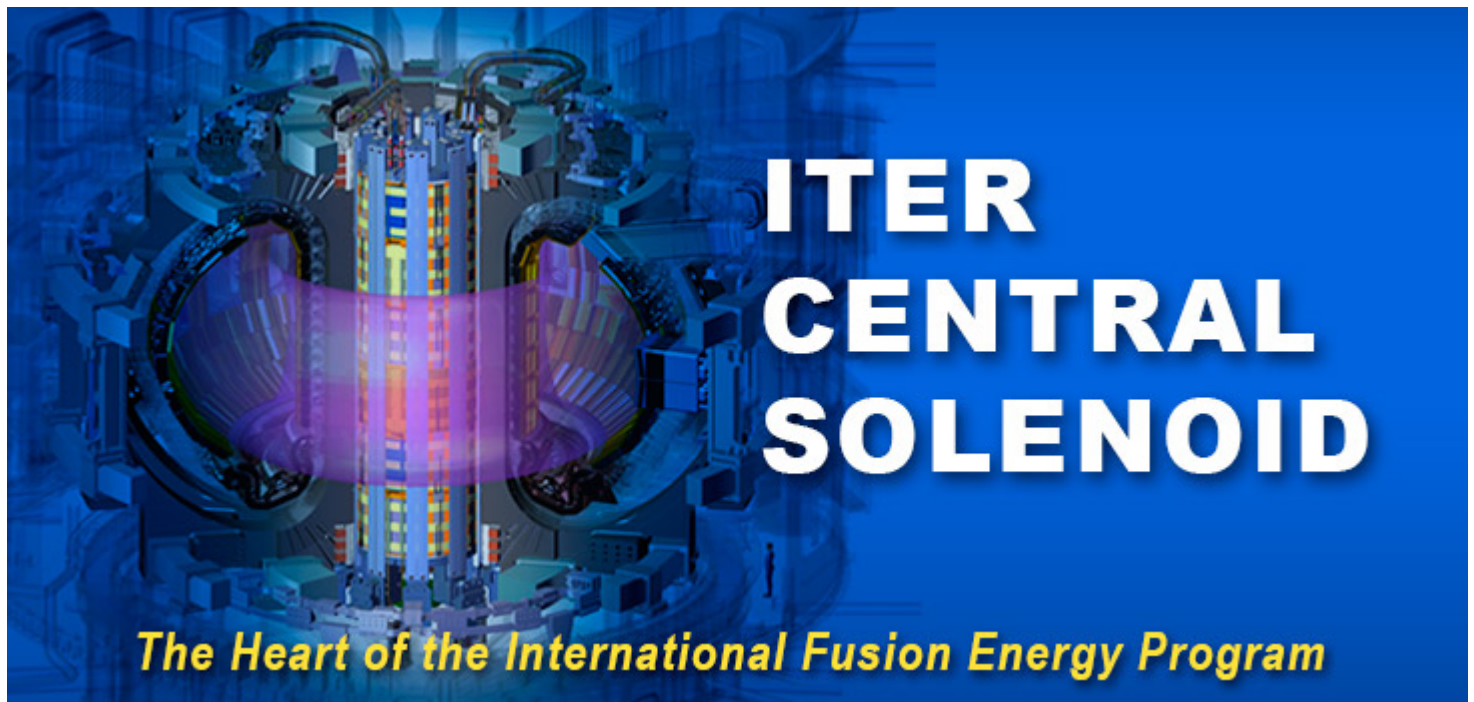


ITER-CS



General Atomics is fabricating one of the world's largest and most powerful pulsed superconducting electromagnets for ITER, an unprecedented [scientific collaboration of 35 nations](#). The Central Solenoid is the heart of ITER, and the 5-story, 1,000-ton magnet will drive 15 million amperes of electrical current in ITER's fusion plasma for stabilization. Each coil will be 7 feet tall, 14 feet wide, and be composed of 4 miles of superconducting cable. The completed Central Solenoid will power ITER in its quest to prove that nuclear fusion – the process that powers the stars – can produce virtually limitless safe, clean and renewable energy.

Manufacturing the Central Solenoid is an [exacting, complicated process](#) that began in 2015 and will take several years to complete. [link to new Magnet Technologies page] A collection of high- and low-resolution images of the Central Solenoid facility can be viewed in the [Photo Gallery](#).

GA is developing a range of other technologies for ITER. These include:

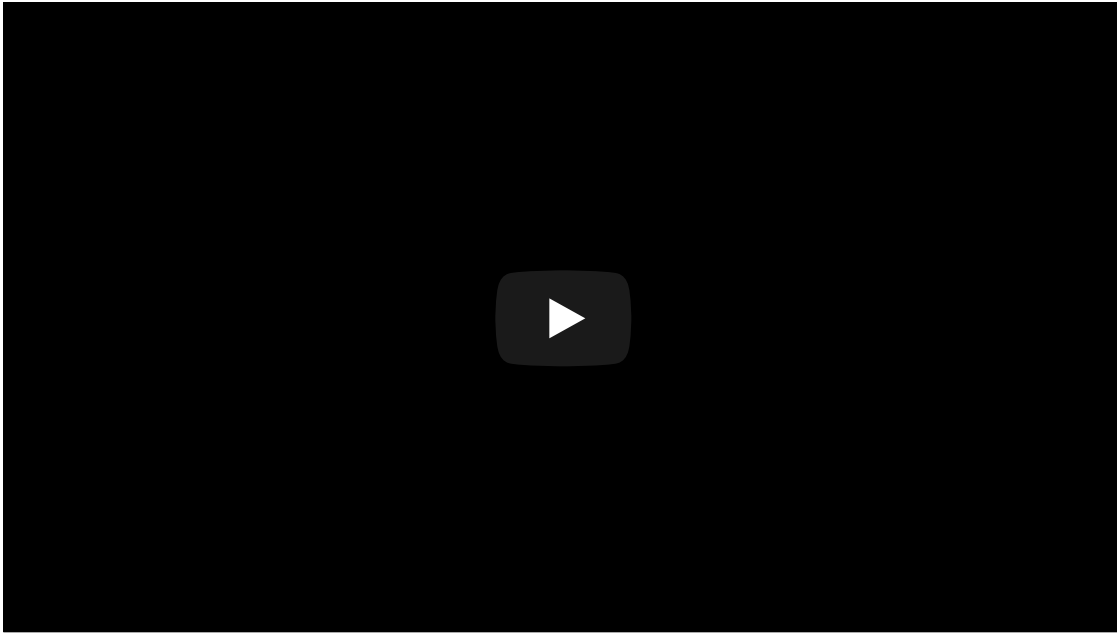
- Low energy loss, high-power microwave transmission line components
- Software for real-time plasma control
- Methods to prevent uncontrolled collapse of ITER plasmas and high energy bursts from plasma edge using internal stabilization coils
- Low Field Side Reflectometer: A diagnostic using microwaves to measure plasma density profiles
- Wide Angle Visible & Infrared Viewing System: Set of diagnostic cameras to monitor for hot spots in ITER plasma chamber
- Toroidal Interferometer Polarimeter: Diagnostic to measure plasma density distribution
- Archiving methods for storing multi-gigabytes of ITER experimental data

[ITER Reaches 50% Completion Mark on the Path to First Plasma in 2025](#)

The International Thermonuclear Experimental Reactor (ITER), a project to prove that fusion power can be produced on a commercial scale and is sustainable, is now 50% built to initial operation. ITER will use hydrogen fusion, controlled by a massive superconducting magnet being fabricated by General Atomics in San Diego, to produce heat energy. In the commercial machines that will follow, this heat will drive turbines to produce electricity.

Dec 6, 2017

[Building the Heart of ITER](#)



General Atomics is building the ITER Central Solenoid – the five-story, 1,000-ton magnet that will be at the center of the international fusion energy experiment being constructed in southern France. A recent video released by U.S. ITER shows how GA is supporting ITER, an unprecedented international collaboration of scientist and engineers working to design, construct and assemble a burning plasma experiment that can demonstrate the scientific and technological feasibility of fusion power.

Sep 12, 2017

[The Future of Fusion Energy](#)

The United States, along with 34 other nations, is making a massive investment in time and money to help to build a huge experimental nuclear fusion reactor in the south of France that bills itself as one of the most ambitious energy projects in the world today – and General Atomics is a key member of the team making it happen.

Jul 17, 2017

[General Atomics Completes Heat Treatment of ITER's First Central Solenoid Module](#)

Today General Atomics (GA) reached another key milestone in the fabrication of the ITER Central Solenoid as engineers and technicians at GA's facility officially completed heat treatment of the first module.

Apr 26, 2017

[General Atomics' Qualification Coil for ITER's Central Solenoid is Now Fully Insulated](#)

Because ITER's Central Solenoid is subject to fault voltages up to 14,000 volts and must be tested at 30,000 volts, successful ground insulation of the coils is a vital step in the fabrication process of the modules.

Dec 2, 2016

[Central Solenoid Fabrication: a Photo Reportage from ITER Newslines](#)

Inside of a purpose-built facility at General Atomics in California (US), ten customized workstations for central solenoid production...

Jul 18, 2016

[Secretary of Energy Moniz Urges Continued Work on ITER Fusion Reactor](#)

General Atomics is Building ITER's Central Solenoid, the Heart of the Fusion Reactor

May 26, 2016



Downloads

- [GA-ITER Datasheet](#)
- [GA-ITER Magnet Technologies Center](#)
- [Q&A About ITER and Fusion](#)
- [US ITER Factsheet](#)

Contact

[John Smith](#)

©2018 General Atomics. All rights reserved. | [Legal](#) | [Contact](#)