

**Contact:**

**Michel Claessens**

**+33 (0)4. 42.17.66.13**

**[michel.claessens@iter.org](mailto:michel.claessens@iter.org)**

**Comments:**

## ITER Organization and Air Liquide sign EUR 83 million contract for Liquid Helium Plant

**Saint-Paul-lez-Durance, 19 December 2012. Representatives of the ITER Organization and Air Liquide Advanced Technologies (France) have signed a contract for the design, manufacturing, installation and commissioning of the ITER Tokamak's three cryogenic liquid helium plants that, together, will make up the largest cryogenic plant infrastructure ever built.**

On Tuesday, 11 December 2012, ITER Director-General Osamu Motojima and the Managing Director of Air Liquide Advanced Technologies, Xavier Vigor, signed the contract for ITER's three identical liquid helium (LHe) plants. The contract comprises the design, manufacturing, installation and commissioning of the three cryogenic LHe plants, which are adapted to the long-term, uninterrupted operation of the ITER Tokamak. The contract is worth EUR 83 million.

china

eu

india

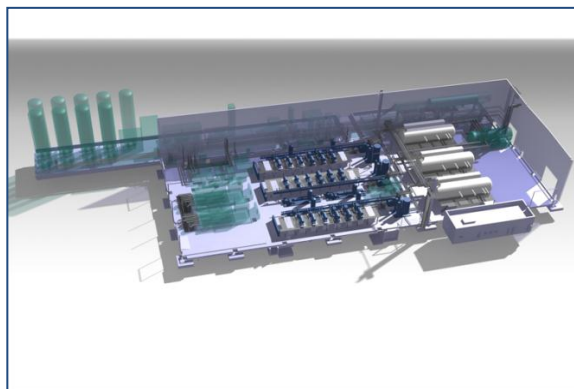
japan

korea

russia

usa

The ITER Tokamak will rely on the largest cryogenic plant (cryoplant) infrastructure ever built, measuring 45 by 120 metres. Three LHe plants, working in parallel, will provide a total average cooling capacity of 75 kW at 4.5 K and a maximum cumulated liquefaction rate of 12,300 litres/hour. The cryoplant and cryo-distribution system will supply cooling for the ITER superconducting magnets to confine and stabilize the plasma. They will also provide the refrigeration for the cryosorption panels that are necessary to evacuate the helium ashes stemming from the fusion reaction and to assure the required vacuum for the cryostat and the vacuum vessel. All these users require helium cryogen at different temperature levels ranging from 4.5 K, to 50 K and up to 80 K.



The ITER Tokamak will rely on the largest cryoplant infrastructure ever built

The key design requirement is to cope with ITER's large dynamic heat loads ranging from 40 to 110 kW at 4.5 K mainly deposited in the magnets due to magnetic field variation and neutron production from deuterium-tritium fusion reactions. At the same time, the system must be able to cope with the regular regeneration of the cryopumps.

Manufacturing of the LHe plant main components will start after design finalization in 2014. The first compressor station will be delivered at the end of 2015 and the LHe plants will be ready for the cool-down of sub-systems in 2018.

“This is a major milestone not only for the cryogenic system but for the whole project,” said the Head of the ITER Plant Engineering Division, Luigi Serio. “The contract covers the principal component that will drive the cool-down of the machine, setting the pace toward First Plasma.”



This will be the place! The ITER Cryogenic Section together with the team from Air Liquide Advanced Technologies (Managing Director Xavier Vigor is third from right)

“We are very happy and excited to participate in the great ITER adventure,” Xavier Vigor said. “Be assured that we, the team from Air Liquide, are fully committed to making ITER a success.”

Air Liquide is the world leader in gases for industry, health and the environment, and is present in 80 countries with 46,200 employees. Oxygen, nitrogen, hydrogen and rare gases have been at the core of Air Liquide’s activities since its creation in 1902. In 2011, the Group’s revenues amounted to EUR 14.5 billion, of which more than 80% were generated outside France.

### **Background on ITER:**

ITER has been established to demonstrate the scientific and technological feasibility of fusion power. ITER is a unique international collaboration bringing together China, the European Union, India, Japan, Korea, Russia and the USA.

For more information on ITER, please visit [www.iter.org](http://www.iter.org).