



5 May 2015, Barcelona

## **Europe's first-ever equipment arrives to ITER**

Europe, the biggest shareholder out of the seven parties contributing to ITER, the largest international scientific collaboration in the field of energy bringing together 80% of the global GDP and 50% of the world's population, has celebrated a symbolic milestone with the arrival of its first-ever piece of equipment to the project's seat in Cadarache, south of France.

Fusion for Energy (F4E), the European Union organisation managing Europe's contribution to ITER, and Ensa, a Spanish company responsible for the design and manufacturing of six tanks that will be part of the fusion reactor's fuel cycle system, have made history the moment the equipment crossed the gates of ITER. The European contribution to ITER is in the range of 50%. In other words, Europe's industry, SMEs and laboratories will have the opportunity to develop and manufacture almost half of the components required through the contracts launched by F4E. Currently, Europe has signed more than 400 contracts reaching a cumulative value of 3 billion EUR with more than 250 companies and 50 laboratories.

The contract awarded to Ensa builds on the expertise of Empresarios Agrupados and GEA as subcontractors. It has taken roughly 20 months for the six tanks to be designed and manufactured, whose cost is in the range of 2 million EUR. Pietro Barabaschi, F4E's Acting Director, explained that "the arrival of this equipment marks the beginning of a long list of components that we, as Europeans, have the duty to manufacture and deliver to ITER-the biggest fusion energy project". Rafael Triviño, Ensa's Managing Director, stated that "ITER is an impressive technological project and it has been a great honour to be the first European company supplying the first components".

### **The scope of the contract**

The six large-sized tanks are part of ITER's water detritiation system. When ITER starts operating, the purpose of these tanks will be to collect the water containing tritium in order to recover it and subsequently use it in future fusion reactions. Four tanks, weighing approximately 5 tonnes and measuring 20m<sup>3</sup> each, will be part of this system. Two bigger tanks, weighing approximately 20 tonnes and measuring 100m<sup>3</sup> each, will be used for the tritium recovery phase in exceptional circumstances. The six tanks will be initially kept at a safe area, and once the Tritium plant is ready, they will be installed in the building. Ensa had to comply with a series of stringent safety and quality requirements that apply to ITER components.

### **The role of the water detritiation system**

To get fusion going two hydrogen isotopes- deuterium and tritium- need to collide at extremely high temperatures reaching 150 million °C. According to the sequence of actions of the ITER fuel cycle, the two hydrogen isotopes will be supplied in the machine through the Tritium plant. The two isotopes will travel through the pipes of the system to reach the core of the machine and fuse to release energy. What is left from the fuel of the fusion reaction, together with other gases produced,

will return through pumps to the Tritium plant in order to recover the tritium and use it to start all over a new series of fusion reactions

**MEMO:** Europe's first-ever equipment arrives to ITER

**Photos:** View the delivery of Europe's first-ever equipment to ITER [here](#)

### **Fusion for Energy**

Fusion for Energy (F4E) is the European Union's organisation for Europe's contribution to ITER.

One of the main tasks of F4E is to work together with European industry, SMEs and research organisations to develop and provide a wide range of high technology components together with engineering, maintenance and support services for the ITER project.

F4E supports fusion R&D initiatives through the Broader Approach Agreement signed with Japan and prepares for the construction of demonstration fusion reactors (DEMO).

F4E was created by a decision of the Council of the European Union as an independent legal entity and was established in April 2007 for a period of 35 years.

Its offices are in Barcelona, Spain.

 <http://www.fusionforenergy.europa.eu>

 <http://www.youtube.com/user/fusionforenergy>

 <http://twitter.com/fusionforenergy>

 <http://www.flickr.com/photos/fusionforenergy>

### **ITER**

ITER is a first-of-a-kind global collaboration. It will be the world's largest experimental fusion facility and is designed to demonstrate the scientific and technological feasibility of fusion power. It is expected to produce a significant amount of fusion power (500 MW) for about seven minutes. Fusion is the process which powers the sun and the stars. When light atomic nuclei fuse together form heavier ones, a large amount of energy is released. Fusion research is aimed at developing a safe, limitless and environmentally responsible energy source.

Europe will contribute almost half of the costs of its construction, while the other six parties to this joint international venture (China, Japan, India, the Republic of Korea, the Russian Federation and the USA), will contribute equally to the rest.

The site of the ITER project is in Cadarache, in the South of France.

<http://www.iter.org>

### **For F4E media enquiries contact:**

Aris Apollonatos

E-mail: [aris.apollonatos@f4e.europa.eu](mailto:aris.apollonatos@f4e.europa.eu)

Tel: + 34 93 3201833 + 34 649 179 42