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## **Fusion for Energy signs landmark contract for the construction of the Tokamak complex and surrounding buildings**

**Fusion for Energy (F4E), the organisation managing Europe's contribution to ITER, celebrates a landmark achievement with the signature of one of its largest contracts in the area of the civil engineering works for the construction of the Tokamak complex, the building that will host the ITER Tokamak machine. Other buildings and amenities surrounding the Tokamak complex will also be delivered through this contract.**

**This is a key development for the ITER project and a milestone of significant importance for Europe, because it demonstrates its commitment to this international collaboration in the field of energy and delivers on an instrumental chapter of its construction. The contract is expected to run for five and a half years and its budget is in the range of 300 million EUR. The successful collaboration of French and Spanish companies forming the VFR consortium, which consists of French companies VINCI Construction Grands Projets, Razel-Bec, Dodin Campenon Bernard, Campenon Bernard Sud-Est, GTM Sud and Chantiers Modernes Sud, and Spanish company Ferrovial Agroman, boasts a proven track record in the field of construction and will deliver on a contract that is underpinned by impressive complexity, multiple interfaces and strict safety standards.**

### **The ITER site in figures:**

The size of the ITER platform is 42 hectares and Europe is the party responsible for the delivery of the 39 buildings that the ITER platform will host. Currently, the personnel directly involved in construction counts 200 people and by mid-2014 it is expected to reach 3,000 people. One of the key challenges will be to accommodate the needs of the rapidly growing workforce and to guarantee an optimal use of space to the different companies operating on the ground, in order to carry out the construction of all infrastructures in parallel and on time.

### **The scope and key figures of the Tokamak complex and surrounding buildings contract:**

Through this contract the following infrastructure and amenities will be constructed: the Tokamak complex, consisting of the Tokamak, Diagnostics and Tritium buildings, the ITER Assembly hall, the radio frequency heating building, the areas for heating, ventilation and air conditioning, the cleaning facility and site services buildings, the cryoplant compressor and coldbox building, the control buildings, the fast discharge and switching network resistor building, and three bridges.

A total of 150,000m<sup>3</sup> of concrete will be used for all buildings out of which 110,000m<sup>3</sup> will be used for the construction of the Tokamak complex. This is the equivalent of the concrete used for 3,000 houses of 120m<sup>2</sup>. The building will be 80 metres high, 120 metres long and 80 metres wide. Its footprint will be bigger than that of a football stadium. The Tokamak building will rely on 493 plinths equipped with anti-seismic bearings, already in place, able to sustain the overall weight of the machine, which will be in the range of 23,000 tonnes almost three times the weight of the Eiffel Tower.

The Tokamak complex will host 100 heavy nuclear and confinement doors in total. The major doors will measure 4 metres high by 4 metres long and 35 cm thick. Their unit weight will be in the range of 40 tonnes and they will be remotely operated.

The works within the framework of the contract will require 7,500 tonnes of steel for the different structures and 16,000 tonnes of steel for reinforcement bars. The total number of embedded parts upon which the ITER equipment will be located, is expected to reach the impressive number of 60,000 units. Overall, it is estimated that 600 people will be involved in the works conducted in this contract.

#### **Background information:**

#### **MEMO: Fusion for Energy signs contract for Tokamak complex and surrounding buildings**

**Watch the F4E YouTube clip describing the Tokamak complex:**

<http://bit.ly/XFnq9V>

#### **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>

#### **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 to 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/>

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