



**FUSION
FOR
ENERGY**

Fusion for Energy The European Domestic Agency for ITER

How to do business with F4E ?

Dutch-French cooperation on ITER project, Utrecht 29th June 2009

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1. What is ITER
2. What is F4E
3. F4E Contracts & Finance overview
4. F4E Work Programme 2009 update
5. F4E supplier relationship
6. F4E industrial policy

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1. What is ITER

Technical aims are fixed

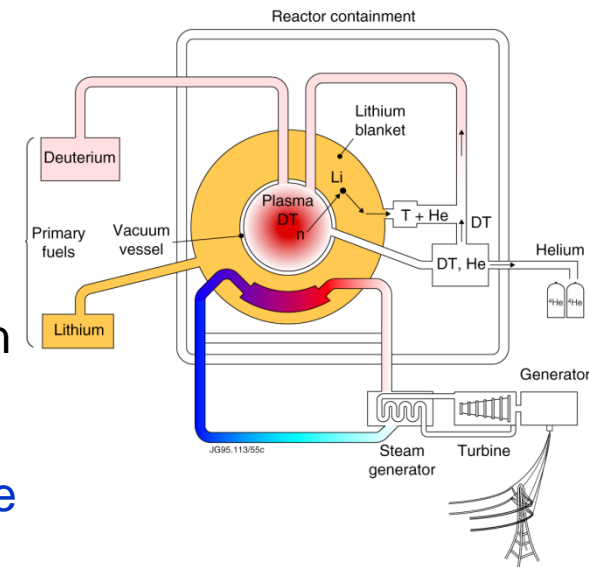


- Demonstrate steady state fusion power production.
- Study and optimise plasma behaviour.
- Demonstrate the technologies required for fusion power stations (except materials endurance).
- Size comparable to a power station.
- Produce about 500 MW of fusion power ($Q=10$).
- Operate for about 20 years.
- Schedule comparable to the Generation IV Fission Reactors (2020 / 2040).

1. What is ITER ITER and Fusion



- Fusion will be a large source of energy with basic fuels largely available in the sea
- No greenhouse gas emissions. Very low impact on the environment
- A fusion power station will not require the transport of radioactive materials
- Power Stations would be inherently safe. No possibility of “meltdown” or “runaway reactions”. Fusion reactors work like a gas burner: once the fuel supply is closed, the reaction stops
- No long-lasting radioactive waste to create a burden on future generations
- With about 3000 m³ of water (->D) and 10 tons of Li ore (->T), a future 1 GW_{el} fusion power plant will be able to operate one year



1. What is ITER

The project & the participants are settled



- World's biggest fusion energy research project & world's largest S&T cooperation endeavor.
- Objective: to demonstrate the scientific and technological feasibility of fusion power.
- To be built in Europe in Cadarache, France.



7 parties:



1. What is ITER

Task repartition and players around ITER



- **ITER Organization (IO)**, Cadarache, undertakes reactor assembly & operational start of ITER device.
- **ITER France** agency, Cadarache, is in charge of ground preparation, safety related questions on behalf of IO, & on-site staff welcoming.
- **7 Domestic Agencies** (including F4E) manage the operational procurements and budget relative to their contribution. They deliver in-kind contribution to IO in the form of components, works & services.

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2. What is F4E Contributions and European decision



For the construction of ITER, the Parties agreed that

- 90% of the contributions are in-kind
- 10% are in-cash contributions to ITER Organization.

The European Commission proposed to create a new organisation with a legal personality in order to meet its obligation as a Party

Under the Euratom Treaty, a Joint Undertaking was the most appropriate legal basis based on the experience of the Joint European Torus in the UK (1971-1999, EFDA thereafter).

So Fusion for Energy (F4E) is the EU Domestic Agency:

- fully empowered to make decisions on behalf of the EU.
- fully responsible of the EU budget.

2. What is F4E

Main facts



- Established in april 2007 for a period of 35 years
- F4E is an industrial & procurement agency
- F4E members: 27 UE states + Switzerland
- Headcount will be roughly 300 people by end of year 2009
- F4E is based in Barcelona but has also an antenna in Garsching (D) and Cadarache (F).



F4E 2009 anual C&P budget of approximatively 400M€ of which more than 90% are dedicated to operational procurements.

2. What is F4E Our objectives



The objectives of Fusion for Energy are threefold:

- Provide Europe's contribution to the ITER international fusion energy project
..and also
- Implement the Broader Approach agreement between Euratom and Japan.
- Prepare for the construction of demonstration fusion reactors (DEMO).

All three objectives form part of the “Fast Track” approach to fusion.

2. What is F4E

Scope of our mission for ITER



EU has to provide through F4E

- 45 % of ITER construction,
- 34 % of operation, deactivation and decommissioning costs,



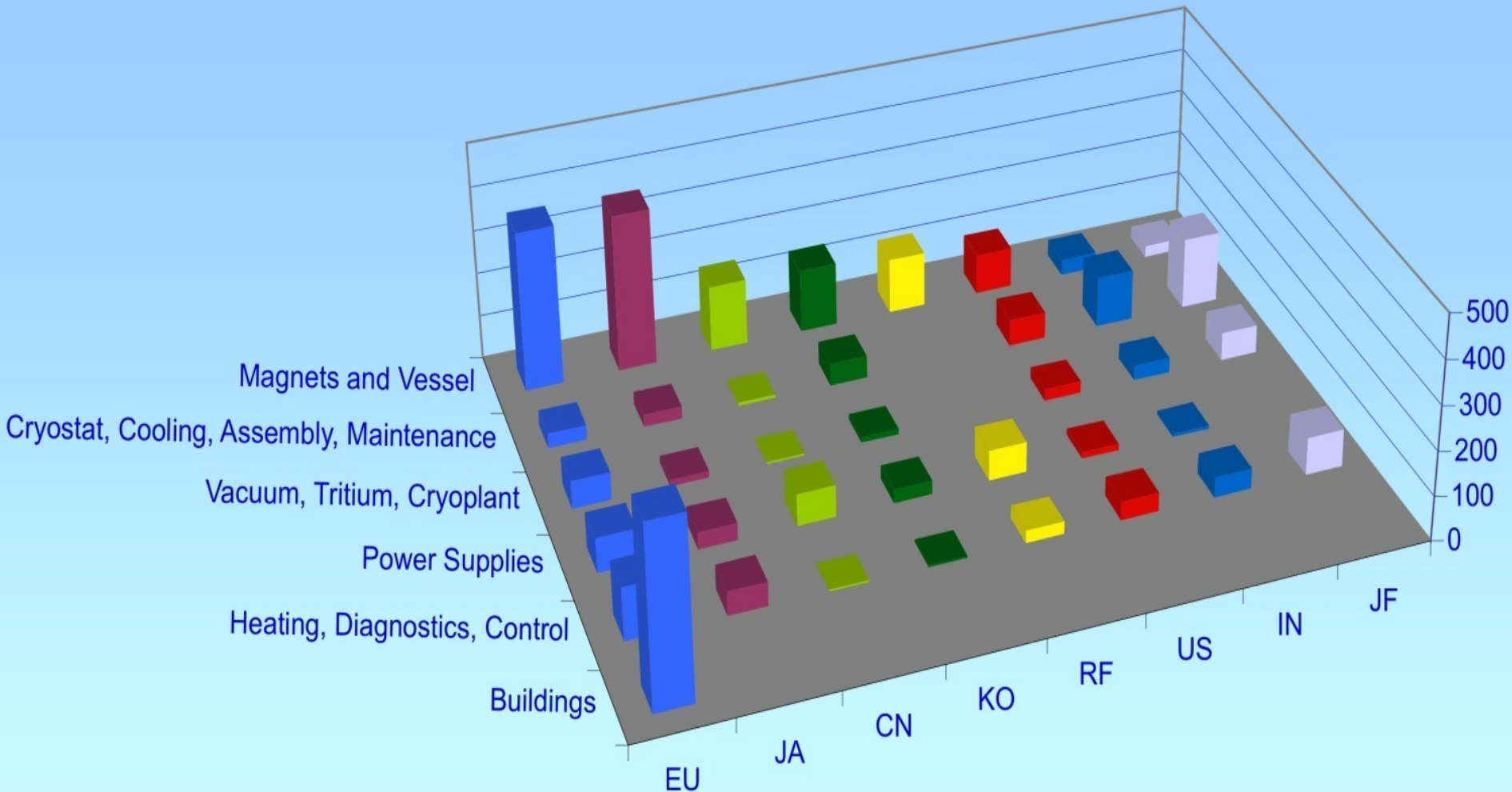
F4E manages 5B€ budget

F4E will engage 380M€ in Procurements and Grants in 2009

EU + CH (Euratom) are engaged in almost all of the 85 Procurement Packages shared with the six other Parties.

2. What is F4E

F4E in the global cost sharing of ITER



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3. The Contracts & Finance Department

Our rationale & scope



Rationale:

- Efficiency and reactivity, now for ITER then for DEMO

Scope:

- Strong and broad economic impact of ITER:
Contracts & Finances operates at transnational level and will steer partnership within the ITER world
- Our favorite supplier market is Europe... but we will go worldwide if needed.
- Networking with other Domestic Agencies in order to share information on suppliers and best practices.

3. The Contracts & Finance Department

Contracting models



- F4E will contract to organisations via:
 - Grants through Calls for proposals
 - Procurement contracts through calls for tender
- Grants will support R&D at 40% through specific contracts or framework partnership agreements
- Procurement contracts will provide goods, works or services at fixed price through:
 - Open procedure
 - Restricted procedure
 - Competitive dialogue
 - Negotiated procedure

Emphasis on restricted procedure and competitive dialogue due to technical complexity

3. The Contracts & Finance Department

Our procedures



Open procedure

- ✓ all interested economic operators may submit a full tender

Restricted procedure

- ✓ Procedure carried out in two phases:
 - 1: Pre-selection following a Call for Expression of Interest
 - 2: Call for Tender: only pre-selected companies may submit a tender.

Competitive dialogue

- ✓ For particularly complex contracts, collaboration with industry to clarify technical specifications

Negotiated procedure

- ✓ only for contracts below 250.000 Euro and in exceptional cases (justification required)

3. The Contracts & Finance Department

Our procedures



In case of Open or Restricted Procedure



- The contractor must comply with the instructions contained in the Tender
- First offer is the Best And Final Offer
- Any deviation to the process may lead to automatic exclusion of the tenderer

3. The Contracts & Finance Department Procedures for low value contracts



Contract value is $< 250\text{k€}$ and $> 50\text{k€}$ (Articles 100, 101 and 117(2) IR):

- negotiated procedure
- no publication of a contract notice
- at least three candidates

Contract value is $< 50\text{k€}$ and $> 5\text{k€}$ (Articles 100, 101 and 117(2) F4E IR):

- negotiated procedure
- no publication of a contract notice
- one (or more) candidate(s)

Contract value is $< 5\text{k€}$ (Article 80 F4E IR):

- no procedure required
- payment against invoice.

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4. Work Programme 2009

Overall status



- Operational budget 2009 priority 1 : 348 M€
- Contracts to be signed before end of 2009
 - 120 M€ for the buildings
 - 36.2 M€ for the Machine System
 - 13 M€ for the HCD& Phys
 - 2.3 M€ for the Plant
- Our initial Work Program 2009 is under re-assessment
- It will be presented to the Governing Board in July
- A New version will be published asap
- Based on this amended Work Program we will communicate the planning for Call For Tenders until end of 2009.

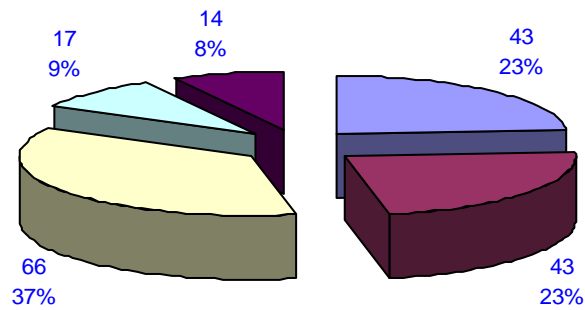
4. Work Programme 2009

Thematic markets



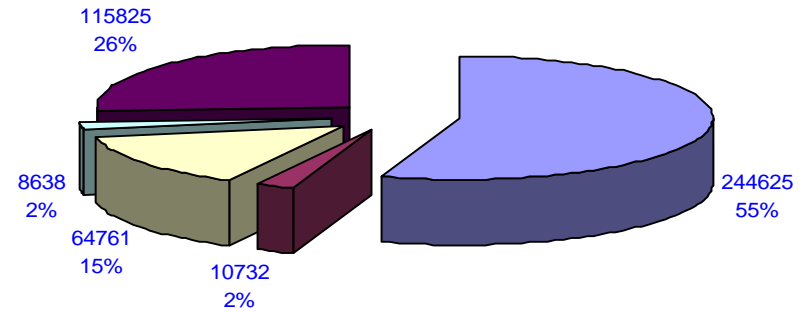
Breakdown of Work Program P1 per themes

Thematic Breakdown



- MACHINE SYSTEM ■ PLANT SYSTEM ■ HCD & PHYS
- ENGINEERING SUPPORT ■ BUILDINGS AND PS

Thematic Breakdown in amount



- MACHINE SYSTEM ■ PLANT SYSTEM ■ HCD & PHYS
- ENGINEERING SUPPORT ■ BUILDINGS AND PS

4. Work Programme 2009

Status on some procurements



- Buildings: Support to the owner, Architect Engineer, PF Coil building, H&S.
 - Selection of companies after CFEI done. List to be published on our Web site.
- Radial plates:
 - Prototype open procedure closed: decision on Lot 1 pending
 - Series production procedure will be launch within one year
- TF Coil winding packs
 - Open procedure to be launched in the coming weeks,
- Vacuum Vessel
 - Procedure subject to cancellation
 - On-going discussions at ITER level
- Engineering services
 - No more procedure this year except potentially Quality Assurance inspectors
- Broader Approach procurements
 - Mainly in-kind contributions from member States
 - Cabling and Jacketing for JT60 superconductors will be potentially included as a separate lot of Superconducting for ITER

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5. F4E suppliers' relationship Principles



For F4E Industry is more than a supplier and may be a partner.

- Looking a short-medium and long term benefits

Develop our Industrial Portal

- Phase 1 include Supplier pre-qualification and assessment (see following slides)
- Phase 2 will include full electronic Call For Tender management

F4E provides as much information as needed for a mutual understanding → good contracting.

F4E takes Industry into consideration for possible inflexions on 'touchy' questions such as :

- Terms of payment,
- Insurance and Liabilities (nuclear and conventional and consequential),
- Conflicts of Interest,
- IPR.

5. F4E suppliers' management

Pre-qualification principles



The F4E suppliers Pre-qualification assesses the following domains

- General information, Financial, Quality and Delivery records

For each criteria, traffic lights are used:

- **Green** for A and B, (A means outstanding and B means Good)
- **Amber** for C, (C means the delivered information are not accepted)
- **Red** for D, (D means information are not delivered)

A supplier will be considered as not pre-qualified if one of the domain is either **Amber** or **Red**.

A supplier not pre-qualified can still answer to a procurement or grant Procedure.

A pre-qualified supplier will not automatically be selected for a grant or Procurement procedure.

Pre-qualification data will be shared F4E-wide (ITER department) but also with other ITER Domestic Agencies.

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ITER success needs to be set on an Industrial Policy

Means

- Build a learning network with other DAs (exchange of info)
- Rely on the Industrial Liaison Officers network
F4E listens to suppliers and spread information directly or through Industrial Liaison Officers (regular meetings and workshops).

6. F4E industrial policy

Actions on-going



Actions

- **Information :**
 - *Publication of our work programme on our web site*
 - *WP 2010 : better scheduling of our calls for tenders*
 - *WP 2010 : identification of the competences required*
- **Industrial momentum :**
 - *F4E publishes the list of companies selected to tender in restricted procedures*
 - *F4E wishes European SMEs to be part of Fusion Industrial momentum*
 - *F4E implement an internal rule to invite 1/3 of SMEs for any calls < 250 k€. This rule will be measured.*
 - *F4E will communicate names of companies able to compete on other European and International tenders.*

- F4E – Fusion For Energy is a new and growing entity aimed to become a center of excellence for the development of Fusion (and associated technologies) in Europe.
- Its efficient organization (Joint Teams: technical/procurement) and the collaboration of Industrial Liaison Officer ensure the implementation of F4E Work Programme.
- F4E raises and will raise UE industrial resources (& research laboratories) to conceive, develop and provide necessary ITER components.
- F4E will establish an ambitious industrial policy (adapted to strategic issues) for European enterprises wishing to participate to ITER project.

Thank you