



FUSION FOR ENERGY

The European Joint Undertaking for ITER and the Development of Fusion Energy

THE GOVERNING BOARD

DECISION OF THE GOVERNING BOARD ENDORSING THE PRELIMINARY WORK PROGRAMME 2013 OF FUSION FOR ENERGY

THE GOVERNING BOARD OF FUSION FOR ENERGY

HAVING REGARD to the Statutes annexed to the Council Decision (Euratom) No 198/2007 of 27th March 2007 establishing the European Joint Undertaking for ITER and the Development of Fusion Energy (hereinafter "Fusion for Energy") and conferring advantages upon it¹ and in particular Articles 6(3)(d) and 11 thereof;

HAVING REGARD to the Financial Regulation of Fusion for Energy² adopted by the Governing Board on 22nd October 2007, last amended on 25th November 2011³ (hereinafter "the Financial Regulation"), and in particular Article 64 thereof;

HAVING REGARD to the Implementing Rules of the Financial Regulation⁴ adopted by the Governing Board on 22nd October 2007 last amended on the 25th November 2011⁵ (hereinafter "the Implementing Rules") and in particular Article 53 thereof;

HAVING REGARD to the comments and recommendations of the Bureau, Administration and Finance Committee, Executive Committee and Technical Advisory Panel,

WHEREAS Fusion for Energy should, pursuant to Article 28(4bis) of the Financial Regulation send a preliminary Work Programme for the year n+1 to the Governing Board and Commission by the 31st March of year n;

HAS ADOPTED THIS DECISION:

Article 1

The preliminary Work Programme 2013 of F4E annexed to this Decision is hereby endorsed.

Article 2

This Decision shall have immediate effect.

¹ O.J. L 90, 30.03.2007, p. 58.

² F4E(07)-GB03-11 Adopted 22/10/2007

³ F4E(11)-GB21-10b Adopted 25/11/2011

⁴ F4E(07)-GB03-12 Adopted 22/10/2007

⁵ F4E(11)-GB21-10c Adopted 25/11/2011

Done at Barcelona, 28th March 2012

For the Governing Board

A handwritten signature in black ink, appearing to read 'Stuart Ward', with a long horizontal flourish extending to the right.

Stuart Ward
Chair of the Governing Board

ANNEX I

FUSION FOR ENERGY PRELIMINARY 2013 WORK PROGRAMME (WP2013)

1. INTRODUCTION

At the 9th ITER Council (IC-9) in November 2011 the latest developments of the ITER schedule were presented and it was noted that the estimated first plasma (FP) date of November 2020 is within the baseline approved in July 2010.

The F4E Detailed Work Schedules (DWS), on which the preliminary 2013 Work Programme (WP2013) is based, provides the schedule for the ITER components with special emphasis on those on the critical path for the machine construction. The F4E schedule used for the preparation of this document is the latest approved set of F4E schedules (currently dated December 2011).

The Governing Board is invited to note that the draft WP2013 should be considered to be preliminary since it will be subject to changes depending on the implementation of activities under WP2012. As far as the ITER activities are concerned, the draft WP2013 is based on the following assumptions:

- The necessary inputs from IO will be provided in time to allow the associated Procurement Arrangements (PAs) to be concluded according to the foreseen schedule and agreed level of design.
- F4E will receive on time from IO the necessary inputs foreseen in the ITER Quality Management process deposited with the Nuclear Safety Authorities and in accordance with the agreed level of design.
- For R&D and preparatory activities that have to be carried out by F4E prior to signing the PAs, it is assumed that F4E must receive from ITER Task Agreements additional credit to carry out this work.
- F4E will receive on time, from ongoing contracts and grants, the technical input needed for the preparation of the tenders.
- This draft WP2013 is in line with the new set of guidelines for the evaluation of the Additional Direct Investment (ADI) credit endorsed at the 8th meeting of the ITER Council (June 2011).
- The planning of the activities and the corresponding delivery of components by the other ITER Domestic Agencies will be respected.
- ITER Design Reviews will be completed positively and timely;
- The necessary F4E human resources will be available.

As for the budget, this preliminary WP2013 is in agreement with the latest budget allocation agreed at EU level last December 2011.

Regarding the WP2013 for Broader Approach, the main assumptions are that this is to be coherent with the individual BA Projects' Work Programmes and Project Plans as approved by the Broader Approach Steering Committee.

2. ACTIVITIES

2.1 ITER

It is expected that additional Procurement Arrangements will be signed in some areas such as blanket, cryopumps and diagnostics. However, this achievement depends on the evolution of the preparatory activities in such areas and in the time required to negotiate the final specifications,

In addition, it should be borne in mind that some large contracts, even if not included among the WP2013 activities may be signed in 2013, although financially included under WP2012 (Global Commitments).

The table here below lists the main activities that are currently included in the F4E set of schedules (as of December 2011). In addition, activities are planned for all WBS areas in support of the indicated large procurements.

These main activities are in line with those indicated in the 2011 Project Plan adopted by the Governing Board. Some differences may exist due to the different supporting schedule (August 2011 for the Project Plan).

WP ref	Area	Activity Type	Activity Title	Activity Description
WP13/11/01	Magnets	Psup	Procurement of TF Winding Pack (WP) - (phase II)	Procurement of TF WP-Stages #02 and #03
WP13/15/01	Vacuum Vessel	Psup	Procurement of Main Vessel (phase 4)	Procurement of Main Vessel - Stages 2D/7D/8D/9D - Fabrication of D-Shape
WP13/23/01-02	Remote Handling	Psup, G	Procurement of In-Vessel Viewing System	Engineering, Procurement and Follow-up
WP13/23/03	Remote Handling	Psup	Procurement of Neutral Beam Remote Handling Eqpt including Eng & Inst'n	Engineering, Procurement

WP ref	Area	Activity Type	Activity Title	Activity Description
WP13/23/04-05	Remote Handling	Psup	Cask & Plug RH Systems (up to 22 Units + Spares TBD) Procurement Contract	Engineering, Procurement
WP13/31/01	Vacuum Pumping	Psup	Manufacturing and Factory Testing of Cold Valve Boxes (CVBs), Manufacturing of Warm Regeneration Lines	Procurement for Manufacturing and Factory Testing of CVBs and for Manufacturing of Warm Regeneration Lines
WP13/53/06-10	Neutral Beam	P-R&D/ Psup	Neutral Beam Test Facility (NBTF) - Procurements for MITICA (phase 2)	Procurements for MITICA: Vessel, Beam Line components, Residual Magnetic Field Coils, SF6 System, Cryogenic Plant
WP13/55/01-09	Diagnostics	SG	Diagnostics R&D/Design Activities	R&D/Design activities for In-Vessel Services, Pressure Gauges, Plasma Position Reflectometer, Radial Neutron Camera/Gamma Spectrometer, Bolometers, Eq. Visible/IR Wide-Angle Viewing System, LIDAR Thomson Scattering, Charge Exchange Recombination Spectroscopy and Collective Thomson Scattering
WP13/55/10	Diagnostics	SC	Irradiation Testing	Preparation for and conduct of irradiation testing and post-irradiation examination of Diagnostic prototypes; handling, storage and disposal of irradiated components
WP13/55/11	Diagnostics	SC	Port Integration Activities	R&D/Design and design integration activities for Equatorial ports 1 and 10, Upper ports 1, 3 and 17 and Lower ports 4 and 16
WP13/55/12	Diagnostics	Psup	Prototypes and Test Equipment	Manufacture of prototypes and procurement of test equipment in support of Diagnostic R&D/Design activities
WP13/55/13	Diagnostics	Psup	Continuous External Rogowski Coil	Manufacture of CER, factory acceptance testing and delivery to IO

WP ref	Area	Activity Type	Activity Title	Activity Description
WP13/62/01	Buildings	Psup	TB03 (Civil Engineering & Finishes) - Stage #2	Contract for Civil Works & Finishing (Blgs: Tokamak Complex, Assembly Hall, Cleaning Facility, RF Heating, Cryoplant Compressor, Resistors, Site Services, Control Building & Port Cell Doors)
WP13/62/02	Buildings	Psup	TB09 (Civil Engineering & Finishes) - Stage #1	Contract for Civil Works & Finishing (Hot Cell complex and Power Supplies)
WP13/62/03	Buildings	Psup	TB11 - Completion Contract	For all buildings <ul style="list-style-type: none"> - Final fixings and finishing - Fire seals/ stopping - Final paint / cleaning Attendance of Mechanical & Electrical and commissioning
WP13/62/04	Buildings	Psup	TB07 (Design & Build)	Contract for Design & Built (Cold Basin & Cooling Towers, Pumping Stations, Heat Exchangers)
WP13/62/05	Buildings	Psup	TB04 (Mechanical & Electrical Installations) - Stage #2	Contract for HVAC, Elec & Fluid Netw & Hand'g Blgs: Tokamak Complex, Assembly Hall, Cleaning Facility, RF Heating, Cryoplant Compressor, Resistors, Site Services, Control Building.
WP13/56/01	TBM	PServ	Engineering design	Engineering design of TBM and Ancillary systems (implemented under FwC WP11/56/11)
WP13/56/02-05	TBM	SG	R&D in support of TBM Systems preliminary design	R&D in support of TBM Systems Preliminary design in the area of components validation, sensors, functional materials and modelling (implemented under FPAs WP11/56/03, WP11/56/07, WP12/56/07)
WP13/56/06	TBM	Psup	Test Mock-Up(s) Fabrication	Fabrication of TBM box Test Mock-Up(s) for qualification of TBM box fabrication technology
WP13/PO/07	QA & Project Management	PServ	Transportation of Heavy Exceptional and Conventional Loads	Activities and Transports planned for 2013 (last test convoy, EU components and Fos-Cadarache transportation for items from all DAs)

Psup=Supply Contract; Pserv=Service Contract ; G=Grant ; SC=Specific Contract ; SG= Specific Grant

Additional commitments are planned also for:

- Amendments and price indexation for ongoing contracts and grants;
- Cash contribution to ITER IO;
- Cash contribution to Japan;
- Cash contribution in support of the Back-to-Back Agreement with Consorzio RFX Padua (NBTF);
- Support from Experts

2.2 *Broader Approach*

For JT-60SA it is expected that all remaining Procurement Arrangements (with the possible exception of the EC Power Supplies) are placed within 2012. As direct activity of F4E, depending on the decisions regarding the risk management for the schedule critical delivery of the TF coils and associated procurement of one spare coil it may be necessary to start the procurement of strand, conductor and other free issue items and to tender the construction of one spare coil. In addition some engineering support for the qualification of materials/components and regulatory approval is foreseen.

For IFMIF/EVEDA it is expected that practically all remaining Procurement Arrangements will be placed within 2012. As direct activity of F4E the transport of a number of components of the Accelerator Facility is foreseen as well as some small interface items in the prototype accelerator with value up to 100 kEuro. In addition, as part of F4E contributions to the IFMIF/EVEDA BA Project, "cash contributions to the common expenses of the Project Team" were approved by the BA Steering Committee for an amount of 122 kEuro. As usual, this budget will cover the missions outside of Japan of the EU members of the Project Team as well as for regular maintenance needs for the Prototype Accelerator.

For IFERC, regarding the CSC activity, a Procurement Arrangement for Enhancements may be considered, depending on the needs identified in the operation of the supercomputer Helios in 2012. For DEMO R&D activities, minor Procurement Arrangements may be considered to cover the transfer of material samples to Rokkasho. As direct activity of F4E, the transport of a number of components of the DEMO R&D laboratory is foreseen. For the REC activity and DEMO Design activities no Procurement Arrangements are planned at this stage.

The main activities are listed in the following table:

WP ref	Area	Activity Type	Activity Title	Activity Description
WP13/BA/01	STP	Psup	Qualification of materials/components	General Support Activity for experimental tests of materials
WP13/BA/02	STP	Psup	JT-60SA Spare Coil Fabrication , Test and Transport	Set of contracts for the fabrication of one spare TF coil for JT-60SA including strand , conductor, casing, Coil manufacturing and cryogenic tests and transport
WP13/BA/03	IFMIF/EVEDA	Pserv	Component Transports	Several orders on the existing framework contract for IFMIF/EVEDA components transports
WP13/BA/04	IFERC	Pserv	Component Transports	Several orders on the existing framework contract for IFERC components transports

3. PRELIMINARY 2013 WORK PROGRAMME BUDGET INFORMATION

Heading	Commitment appropriations (in Euro)
Administrative Expenditure (Not included in the Work Programme)	43,000,000.00
ITER Construction	1,051,237,000.00
Technology for ITER	19,744,000.00
Technology for BA and DEMO	2,174,000.00
Total Operational Expenditure (For which the WP is the financing decision)	1,073,155,000.00
Total 2013 Budget	1,116,155,000.00