



FUSION FOR ENERGY

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

THE GOVERNING BOARD

DECISION OF THE GOVERNING BOARD ADOPTING THE 2014 WORK PROGRAMME OF FUSION FOR ENERGY

The Governing Board,

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 22 October 2007, last amended on 25 November 2011³ (hereinafter "the Financial Regulation"), and in particular Title III thereof;

Having regard to the Implementing Rules of the Financial Regulation⁴ adopted by the Governing Board on 22 October 2007, last amended on 11 December 2013⁵ (hereinafter "the Implementing Rules"), and in particular Title III thereof;

Having regard to the 2014 Budget adopted by the Governing Board on 11 December 2013⁶,

Having regard to the comments and recommendations of the Administration and Finance Committee, Executive Committee, Technical Advisory Panel and the Bureau;

Whereas:

The Director should, in accordance with Article 8(4)(c), draw up an annual work programme;

The Governing Board should adopt the work programme.

Has adopted this decision:

Article 1

The 2014 Work Programme of Fusion for Energy annexed to this Decision is hereby adopted.

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)-GB21-10c Adopted 25/11/2011
⁴ F4E(07)-GB03-12 Adopted 22/10/2007
⁵ F4E(13)-GB28-14.2 Adopted 11/12/2013
⁶ F4E(13)-GB28-11.2.2 Adopted 27/10/2013

Done at Barcelona, 11 December 2013

For the Governing Board

A handwritten signature in black ink, appearing to read 'Stuart Ward', with a horizontal line underneath.

Stuart Ward
Chair of the Governing Board

For the Secretariat

Raymond Monk
Secretary of the Governing Board

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1 Introduction to the Annual Work Programme

The European Joint Undertaking for ITER and the Development of Fusion Energy or 'Fusion for Energy' (F4E) was created under the Euratom Treaty by a decision of the Council of the European Union.

F4E was established for a period of 35 years from 19th April 2007 and its main offices are located in Barcelona, Spain. The objectives of F4E are three fold:

- Providing Europe's contribution to the ITER International Fusion Energy Organisation (IO) as the designated EU Domestic Agency (DA) for Euratom;
- Implementing the Broader Approach Agreement between Euratom and Japan as the designated Implementing Agency for Euratom;
- Preparing in the longer term for the construction of demonstration fusion reactors (DEMO).

In accordance with the Financial Regulation of F4E and its Implementing Rules, this document lays down a detailed programme of activities that are foreseen to be implemented and financed under the budgetary appropriation for 2014. This information is complemented by the Budget 2014.

The implementation of the activities in this section strictly corresponds to the implementation of the Budget in commitment appropriation, based in particular on the Articles 64 to 67 of the F4E Financial Regulation.

2 Contractual commitments in the year

2.1 Assumptions and Objectives

2.1.1 Assumptions

Following assumptions shall be considered at the basis of the Work Programme 2014:

- 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 schedule used for the preparation of this document is as of end of October 2013. This schedule has been recently revised following the F4E corporate objectives to have a realistic Work Programme 2014. A further revision is in progress in order to implement modifications to reach a realistic schedule for the whole construction also taking into account the resources availability. This work is done in parallel at F4E as well in ITER IO and the other Domestic Agencies (DA) and an integrated realistic schedule is expected to be available (for the short term) only at the end of 2013. The exercise currently in progress in F4E to update the schedule to make it more realistic takes into account:
 - the latest input and developments of the schedules from the F4E suppliers;
 - the most realistic assumption of PA signature dates based on the current status of the design of components and on the forecasted dates of the required design reviews prior to the PA signature;
 - the available manpower in F4E to take into account bottlenecks in specific areas where staffing is not sufficient to grant a prompt process of the work;
 - the available yearly budget for the work on the EU in-kind procurements;
 - the most realistic assumptions on the data availability from ITER IO to take into account the existing delays and the agreed dates of data delivery;
 - the information provided by the other DAs through their monthly Detailed Work Schedule (DWS) to take into account any possible delay in the delivery of items to F4E that can cause delays to the EU in-kind procurements;
- Actions delayed from previous years and foreseen to be implemented with budget 2014 have been integrated in this document and accounts for about 30% of the total actions under 2014 budget.
- In order to achieve an improvement of the quality of the PAs that are signed, an effort is in progress in F4E to better identify the requirements that are linked to each specific procurement. ITER IO has also been called to contribute to this effort by propagating the requirements from the project level down to the level of the PA, where they interface with the DAs. Then F4E will take over for the propagation of the PA requirements down into the different procurement contracts.
- The schedules from the F4E suppliers, taking into account the agreed fabrication routes and showing the real development of the work, are being reviewed every month and the main data, once analysed, integrated into the overall F4E schedule in Primavera.
- At the moment, due to the delays declared by F4E and by the other DAs, there is a consistent misalignment between milestones as declared in the DWS vs the dates included in the current Strategic Management Plan (SMP). Following the scheduling work in progress to achieve a more realistic planning, it is assumed that the ITER Council will have to take a decision in June 2014 (or in 2015 as recommended by MAC during its last October meeting-MAC16) to revise the date of First Plasma accordingly.
- Technically and commercially complex procurements will be implemented whenever appropriate through the competitive dialogue procedure or through the negotiated procedure, in order to improve the alignment of supply chain response to F4E needs and to proactively adopt cost containment measures. This will be done in compliance with F4E Implementing Rules.

- Grants related to recurring and sequential R&D activities, with a well-defined development path eventually leading to an EU procurement package, will be implemented whenever appropriate through the Framework Partnership Agreement (FPA) procedure, in order to streamline and channel R&D funding, improve its effectiveness and reduce administrative burden to beneficiaries and F4E alike.
- Procurements which encompass scope within the domain of both F4E and contracting authorities, or for which a very close coordination between F4E and other entities is needed, will be implemented whenever appropriate through the Joint Procurement procedure.
- F4E endorsement of the Japanese Procurement Arrangement that foresees an EU financial contribution will be preceded by a budgetary commitment for the entire amount of the F4E contribution.

Regarding the WP2014 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.

2.1.2 ITER Credits for Preparatory Activities

This WP2014 includes a programme of R&D and preparatory activities that have to be carried out prior to signing the Procurement Arrangement for the Procurement Packages agreed to be at Build-to-Print level. Recognizing that F4E is carrying out work that should have been completed by IO, additional credit from IO is being requested by F4E through ITER Task Agreements (ITAs). The activities indicated in this 2014 Annual Work Programme as receiving additional (ITA) credits may be cancelled in the event that IO would not make the requested credits available.

Similarly, F4E participates to the call for proposals launched by ITER IO on a competitive basis for activities such as plasma engineering and safety. Activities to answer to forecasted calls in 2014 are also included in this document.

2.1.3 Main Objectives

With respect to activities related to ITER, the main objectives are:

- The negotiation and signature of the ITER Procurement Arrangements, proposed by the ITER Organisation (IO), according to the present F4E schedule.
- The signature of procurement contracts for those components on the critical path and for those foreseen in the current F4E schedule.
- The continuation of design and R&D activities in areas including Remote Handling, Heating and Current Drive, Vacuum System, Tritium System, Diagnostics and Test Blanket Modules.
- The continuation of implementation of building construction contracts.
- The continuation of the preparation of safety and licensing documentation for ITER in Cadarache and related safety studies.
- The investigation of manufacturing methods and non-destructive tests of critical components from the technical point of view with the objective of minimising the cost and risk of not meeting the technical requirements (divertor, blanket and first wall).
- The preparation of new facilities to test prototypes and components during the qualification process and construction respectively.
- The most significant procurements to be either initiated or signed within 2014 are related to:
 - Magnets with a new framework for the testing and characterization of PF strands and PF coils contracts will be signed according to the newly approved procurement strategy;

- Vacuum Vessel, for which additional stages and options will be released according to the progress in manufacturing;
- Neutral Beam system and Electro Cyclotron Power Sources and Supplies, for which procurement contracts contract for High Voltage Deck and Bushing and procurement contract of Main and Body HV power supplies for the EC ITER system BPS & MHVPS will be signed in 2014;
- Site and Buildings and Power Supplies for which TB06 contract will be signed in 2014 partially under Global commitment 2013.

With respect to the Broader Approach (BA), the general scope of the activities is detailed in the Annexes to the BA Agreement signed between EURATOM and the Government of Japan in 2007. For the three BA Projects (STP IFMIF/EVEDA and IFERC Projects), F4E is acting as EU Implementing Agency in close collaboration with JAEA (the JA Implementing Agency).

The scope of activities for BA is subdivided in a number of Procurement Arrangements (PA), signed by F4E and JAEA, covering part of the activities/deliverables. The procurement sharing, within EU commitment, is approved by the EU BA Contact Persons representing EURATOM and all EU VCs. In general, to each PA corresponds an Agreement of Collaboration (AoC) in which the PA commitments are transferred to one or more of the VC Designated Institutions, in line with the agreed sharing.

The vast majority of the EU procurements and contributions are provided by Belgium, France, Germany, Italy, Spain and Switzerland, the EU Voluntary Contributors (EU VCs), which have designated major national research institutions for the practical implementation (VC Designated Institutions).

In the sharing F4E retains some of the hardware procurements (in particular in JT-60SA) and all the transports from the fabrication places in Europe to the designated Ports of Entry in Japan.

The F4E Broader Approach activities for 2014 are expected to proceed according to the BA 2014 Work Programmes which are expected to be endorsed by the 13th BA Steering Committee of 17th December 2013.

2.2 Definitions

The list of the financing decisions at the basis of the implementation of the 2014 commitments is available in the section 2.3.

The following definitions and assumptions shall be taken into account for the implementation and follow-up of the Work Programme:

- All the activities in the list can be financed with budget 2014 based on the current F4E rules and based on the reference schedule as at the end of October 2013.
- Certain activities have been moved from previous years into WP2014 due to changes in the overall planning and priorities: these items are identified by a WP ref field showing a WPxx tag different from WP14 (e.g. WP11/..). It is understood that the inclusion of these items in WP2014 is cancelling and superseding any corresponding item in a previous year's WP, unless otherwise specified in this document for specific and motivated reasons.
- During the implementation of the work programme activities, F4E may group more activities in a single call or split one activity in more calls. This will in any case be performed preserving the scope and objective presented in WP2014.
- The foreseen time of publication of calls, invitations and legal commitments/contract signature dates are indicative only and based on the present understanding of the project development. For expenditure performed through framework contracts and framework partnership agreements, release of the contractual options, amendments to ongoing contracts or use of Joint

Procurements the foreseen time of publication of calls is not included (N/A in the Work Programme) as no formal publication will take place.

- Publication of the call for tender is intended as the date of publication on the Industry Portal (for open procedures/call for proposals) and the date of the Invitation letter to be sent out to the Suppliers (for negotiated procedures). For restricted procedures and competitive dialogues this milestones refers to the date of the call for tender/dialogue (second phase of the procedure).
- The use of the Grant Unique Beneficiary instrument will be fully justified and summary of justifications are available in 1.1.
- In the following, the activities of Fusion for Energy related to ITER and the BA are described according to the F4E Work Breakdown Structure. The tables provided in the text use the following abbreviations:

Abbreviation	Meaning
WP ref	Work programme reference, univocally identifying WP items WPxx/yy/zz, where xx are the last two digits of the WP/budget year in which the activity was first financed, yy is a code identifying the ITER PBS element (if available) or the F4E service in charge, zz is a sequential number for the year
G	Grant
SG	Specific Grant based on a Framework Partnership Agreement
SC	Specific Contracts based on a Framework Contracts
FPA	Framework Partnership Agreement
FWC	Framework Procurement Contract
P	Procurement (“PServ” for service, “PSupply” supply or “Pwork” works)
Y	Credited by ITER IO through PA
Y(ITA)	Credited by ITER IO through ITA
Y(BA)	Credited under BA Agreement
N	Non credited
MULTIPLE	Commitments will be implemented through multiple WBS

- WP items indicated as Framework Partnership Agreements (FPA) or Framework Procurement Contracts (FWC) are included in the year of signature for clarification purposes only and do not constitute a financing decision: the implementing financing decisions within such frameworks is indicated as appropriate by separate WP items (as either SG or Pserv/SC). The list of the framework contracts and partnership agreements that will be ongoing at the end of 2013 is available in Annex VIII.
- WP2014 introduces the categorization of the work programme activities intended as a measure of confidence of implementation of the milestones foreseen in 2014 based on the current schedule:
 - **Category A:** are the WP activities with legal commitment by the end of September 2014;
 - **Category B:** are the WP activities with legal commitment in the last quarter of 2014 or later;
 - **Category C:** are the activities that F4E considers unlikely to implement with the budget 2014;
- Equivalence F4E OBS to F4E WBS level 3 is available in section 3.6.

2.3 List of contractual commitments in the year

2.3.1 ITER Programme

2.3.1.1 Magnets

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/11/04	EU.01.11.04	FWC	Testing and characterization of PF strands	Service contract to carry out independent verification tests of the PF strand manufactured by RFDA, as required by the PA	Y	13Q3	14Q1
B	WP13/11/05	EU.01.11.04	PServ	Characterization of PF conductor strands	Task Orders for Characterization of PF conductor strands. Mainly to be implemented as specific contracts under the framework contract OPE-405 (WP13/11/04)	Y	N/A	2014
B	WP13/11/13	EU.01.11.03	PSupply	Impregnation Tooling Provision (TI)	Impregnation tooling for PF2-PF6 coils	Y	14Q2	14Q4
B	WP13/11/14	EU.01.11.03	PSupply	Qualification and Handling tooling for PF Coils (TA)	Tooling needed for PF manufacturing operation (i.e. joggle preparation, He inlet/exit preparation, etc).Not includes tooling for winding and impregnation	Y	14Q2	14Q4
A	WP13/11/15	EU.01.11.03	PServ	PF Coils Manufacturing and Cold Test (MFR)	PF Coils Manufacturing and Cold Test (MFR)	Y	14Q1	14Q3

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP13/11/16	EU.01.11.03	PServ	Site & Infrastructure (S&I)	Site & infrastructure support contract for on-site managements of the PF facility	Y	14Q1	14Q4
A	WP14/11/01	EU.01.11.01	PSupply	Assembly of TFWP into Coil Cases	Complementary expenditure for the contract Insertion of the Winding Pack into Coil Cases (WP11/11/07)	Y	NA	14Q1
B	WP14/11/02	EU.01.11.04	PServ	Testing of TF Nb3Sn Strands	Task Orders for Testing of TF Nb3Sn Strands. Mainly to be implemented through the Framework contract OPE-145	Y	N/A	2014
B	WP14/11/03	EU.01.11.05	PServ	Inspectors for Poloidal Fields Coil no 6 (PF06) in China	Provision for mechanical, UT, welds, geometrical inspection, additional inspecting tools for PF06 manufacturing contract in China. Mainly to be performed through the Framework Contract WP14/PO/07	Y	N/A	2014
A	WP14/11/04	EU.01.11.01	PServ	Insurance brokerage	Brokerage for the of the Winding Pack Insurance Mainly to be performed through specific contracts under ongoing framework contracts	Y	N/A	14Q2
B	WP14/11/05	EU.01.11.05	PServ	Transportation	Transportation related contracts and Task Orders for all Magnet components including transportation of components to manufacture PF06 in China	Y	N/A	2014

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/11/06	EU.01.11.01	PServ	Radial plate option	Provisions for late delivery of pre-defined models to Radial Plate supplier as stated in the Contract	Y	N/A	2014
B	WP14/11/07	EU.01.11.01	PServ	Winding Pack Insurance	Insurance of the Winding Pack during insertion process	Y	15Q1	15Q3
B	WP14/11/08	EU.01.11.03	PSupply	PF Cold Test (CTF)	Cold Test Engineering Study and Facility Construction	Y	14Q3	15Q1
A	WP14/11/09	EU.01.11.03	Pserv/P supply	Storage for PF coils conductors	Provisions for storage for the Chinese conductors before the assembly into PF coils on ITER site.	Y	N/A	14Q3

2.3.1.2 Vacuum Vessel

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/15/01	EU.01.15.01	P Supply	Procurement of Main Vessel (phase 5)	Implementation of Fabrication stages for sectors 2,7,8 and 9 and options (including Fabrication and installation for ELM-VS coil, Fabrication and installation for intermediate manifold supports) of the VV contract according to the developing of the manufacturing. It also includes: Finishing for Stages 2, 3, 4 and 5, Machining and forming of Splice plates.	Y	N/A	14Q2-14Q3

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/15/02	EU.01.15.01	PSupply	Procurement of Main Vessel - Additional Activities	Additional activities to be performed by the supplier for the management of the change orders to the VV contract; complementary expenditure for supplier's claims.	Y	N/A	14Q1-14Q3
B	WP14/15/03	EU.01.15.01	PServ	Engineering support for VV construction	Material characterization, irradiation tests, engineering and finite-element analysis to support the VV sectors contract activities These analyses include thermal, structural, electromagnetic and seismic. Also CAD tasks to support, validate and/or integrate IO input data and activities to quickly answer to ANB requests to speed design approval. Mainly to be performed through specific contracts under ongoing frameworks under Technical Support Services area.	Y	N/A	2014
A	WP14/15/04	EU.01.15.01	PServ	Procurement of Inspections	QA inspection activities for the follow-up of the Vacuum vessel contract, including site inspections activities related to NDT, welding, quality assurance, etc. in several supplier manufacturing sites. Mainly to be performed through specific contracts under framework WP11/PO/12 and WP14/15/05.	Y	N/A	14Q3
A	WP14/15/05	EU.01.15.01	FWC	Procurement of Inspections	Framework contract for the QA inspection activities for the follow-up of the Vacuum vessel contract.	N/A	13Q4	14Q2

2.3.1.3 *In vessel*

2.3.1.3.1 Manifolds

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/16/01	EU.01.15.02	PServ	Manufacturing of manifold supports to validate their feasibility.	Manufacturing of prototypes of representative manifold support types. This task aims at verifying the feasibility of the supports and optimizing their manufacturing route. The brazing process and the application of surface coatings will be implemented	Y(ITA)	14Q1	14Q2

2.3.1.3.2 Blanket First Wall

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/16/03	EU.01.16.01	PServ	First wall panel manufacturing development	First wall panel manufacturing development: support in the specification and fabrication of the FSP, focused on material and HIP technologies	Y	14Q1	14Q2
A	WP13/16/07	EU.01.16.01	PSupply	Manufacture of FW full scale prototypes	Manufacture of First Wall full scale prototypes and related manufacturing studies	Y	13Q3	14Q2

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP13/16/11	EU.01.06.01	PSupply	Industrial development of laser/EB sintering for the fabrication of the FW panel supporting beam	Industrial development of laser/EB sintering for the fabrication of the FW panel supporting beam	Y	14Q2	14Q4
A	WP14/16/02	EU.01.16.01	PServ	Follow-up of the First Wall supply contract	Service of expeditors to verify the progress of the contract at suppliers' workshop.	Y	14Q2	14Q3
A	WP14/16/03	EU.01.16.01	Pserv	Quality control external support	Support of external inspectors to fulfil quality control activities on contracts together with or on behalf of F4E personnel. Mainly to be implemented through the framework contract for support inspectors WP11/PO/12	Y	N/A	14Q3
A	WP14/16/04	EU.01.16.01	G ⁷	Irradiation & post –irradiation mechanical Characterization of CuCrZr alloy & CuCrZr / 316L Stainless Steel Joints	Extraction and machining of new samples from mock-ups; higher rates of hot cells; substitution of thermocouples in test apparatus Additional activities for the F4E -GRT-043	Y	NA	14Q1

⁷ Unique Beneficiary: Nuclear Research and Consultancy Group (NRG), technical competence

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/16/05	EU.01.16.01	Pserv	Storage and recycling of Beryllium coated components	Further to extensive R&D programme performed so far under the Blanket FW, a lot of HHF tested mock-ups are stored in different locations. These mock ups need to be processed for recycling of Beryllium and final depository	Y	14Q2	14Q4
A	WP14/16/06	EU.01.16.01	PServ	Options of the High Heat Flux testing contract	Release of the contractual options as following contracts: High heat flux testing of additional fingers of D-NHF SP High heat flux testing of additional fingers of EHF SP	Y	NA	14Q2-14Q3
A	WP14/16/07	EU.01.16.01	PSupply	Fabrication of CuCrZr plates for ITER FW RSP	Procurement of CuCrZr plates to enable fast start of fabrication of RSP (first item of full-scale prototype contract)	Y	13Q4	14Q1

2.3.1.3.3 Divertor

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/17/02	EU.01.17.02	PServ	Monitoring of Inner Vertical Target prototype	Follow- up and inspection of Inner Vertical Target prototype manufacturing. Mainly to be performed through the FW WP11/PO/12 and WP14/PO/07	Y	N/A	14Q3
A	WP14/17/01	EU.01.17.02	PSupply	Optimization of Divertor full W Components	This activity is aimed at optimizing the fabrication of Plasma Facing Units in accordance with latest study/results.	Y	14Q1	14Q2
A	WP14/17/02	EU.01.17.02	G ⁸	Optimization of Divertor full W Components	This activity is aimed at optimizing the fabrication of Plasma Facing Units in accordance with latest study/results.	Y	14Q1	14Q3
A	WP14/17/03	EU.01.17.02	G ⁹	Characterization of Alternative Divertor Material	The activity is aimed to perform destructive examination of full tungsten and alternative carbon fibre composite mock ups tested to high heat flux thermal fatigue. Additional activities for the F4E-GRT-369	Y	NA	14Q1

⁸ Unique Beneficiary: Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA), unique technical competence

⁹ Unique Beneficiary: Forschungszentrum Jülich GmbH (JÜLICH), technical competence

2.3.1.4 Remote Handling

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/23/02	EU.01.23.02	FWC	DIV RH framework contract	Procurement activities related to DIV RH (design, manufacturing and installation)	Y	12Q4	14Q1
B	WP11/23/04	EU.01.23.03	FWC	Transfer Cask RH framework contract	Procurement activities related to cask RH (design, manufacturing and installation)	Y	13Q4	15Q1
A	WP11/23/05	EU.01.23.03	PServ	Transfer Cask RH tendering studies	Provisions for cask RH framework contract (WP11/23/04) tendering	Y	N/A	14Q1
B	WP11/23/06	EU.01.23.05	FWC	NB RH framework contract	Procurement activities related to NB RH (design, manufacturing and installation)	Y	13Q4	15Q1
A	WP11/23/09	EU.01.23.04	Pserv	IVVS tendering studies	Provisions for In-Vessel Viewing System framework contract (WP11/23/08) tendering	Y	NA	14Q2
A/B	WP12/23/04	EU.01.23.02	SC	Divertor Remote Handling Procurement	Design and manufacturing activities related to the DIV RH procurement package (mainly focused on preliminary design and support validation activities like R&D and tests where needed).Mainly performed through WP11/23/02	Y	N/A	14Q2 – 14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/23/01	EU.01.23.05	G	R&D for Caesium oven tooling	R&D activity to demonstrate feasibility of the current Cs oven maintenance strategy and development of bespoke RH tools	Y	14Q1	14Q3
A/B	WP14/23/02	EU.01.23.01	P serv	Engineering Support for Remote Handling	Support activities (procurement follow up; control system, rad-hard technologies; follow up of the IVVS, TCS and NBRH tender; preparation of the other PA for TCS and IVVS; etc...) mainly performed through specific contracts within framework WP 11/ES/06	Y,Y ITA	N/A	2014
A	WP14/23/04	EU.01.23.02	G ¹⁰	Divertor RH Design Support	DTP2 tests and R&D in support of the DIV RH design	Y	14Q2	14Q3

10 Unique Beneficiary VTT Technical Research Centre of Finland and TUT Foundation (trading as Tampere University of Technology): Unique experimental Facility

2.3.1.5 Cryoplant and Fuel Cycle

2.3.1.5.1 Vacuum Pumping and Fuelling

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP12/31/01	EU.01.31.01	PSupply	Procurement of the MITICA Cryopump	Procurement of the MITICA Cryopump, including instrumentation and follow-up	Y	14Q2 - 15Q3	14Q4-15Q4
B	WP14/31/02	EU.01.31.02	P Serv	Technical assessment and cost estimation for Leak Detection and Localization	Procurement of technical assessment and cost estimation for Leak Detection and Localization	Y	14Q4	15Q1

2.3.1.5.2 Tritium Plant

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/32/01	EU.01.32.02	SC	Procurement for Quality Control for Manufacture. of WDS Tanks	Quality Control for Manuf. of WDS Tanks. Mainly to be performed through the framework contract WP11/PO/12 and WP14/PO/07	Y	N/A	14Q1

2.3.1.5.3 Radiological Protection & Environmental Monitoring System

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/64/01	EU.01.64.01	PServ	REMS: preliminary design	REMS Preliminary Design HCC Mainly to be performed through the framework F4E-OMF-298 lot 2	Y	N/A	14Q3

2.3.1.5.4 Waste Treatment

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/66/01	EU.01.66.01	SC	Procurement of Technical and cost assessment for Waste package	Technical assessment of Conceptual Design and cost assessment for Waste package. Mainly to be performed through the framework F4E-OMF-298 lot 1	Y	N/A	14Q2

2.3.1.6 Antennas and Plasma Engineering

2.3.1.6.1 Ion Cyclotron Heating (ICH) and Current Drive Antenna

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP14/51/01	EU.01.51.01	Pserv	Design and analysis and technical coordination	Specific contracts 2014 for the Built to Print design of the antenna Mainly to be implemented through the framework contract WP11/51/02 for the analysis for Built to Print design	Y(ITA)	N/A	14Q1-14Q4
B	WP14/51/02	EU.01.51.01	Pserv	Engineering support (antenna design and analysis)	General analyses in support of the antenna design, such as, but not limited to, mechanical analyses, disruption analysis and seismic/vibration. Mainly to be implemented through specific contracts under the Technical Support Services	Y(ITA)	N/A	2014
A	WP14/51/03	EU.01.51.01	Pserv	Faraday Screen design qualification	Execution of options of the Contract for testing and manufacturing of Faraday Screen Bar WP11/16/01.	Y(ITA)	N/A	14Q1
A	WP14/51/04	EU.01.51.01	Pserv	Vacuum window design qualification	Contracts for the qualification of the RF window design, such as for material procurement, irradiation, measurements of Alumina grades properties before and after irradiation at high temperature.	Y(ITA)	14Q1	14Q2

2.3.1.6.2 Electron Cyclotron (EC) Heating and Current Drive Systems

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/52/01	EU.01.52.01	G ¹¹	EC UL design (phase II)	Amendment of grant (WP09/52/07) for design, analysis and documentation for EC-UL Final Design.	Y(ITA)	N/A	14Q3
A/B	WP14/52/02	EU.01.52.01	PSupply	EC UL prototypes	Prototypes and mock-up fabrication for the EC launcher, including mechanical prototypes, Isolation valves and mm-wave components.	Y(ITA)	14Q1-14Q3	14Q2-14Q4
A/B	WP14/52/03	EU.01.52.01	Pserv	Support to prototype procurement and testing	Expert support during manufacture and testing of prototypes.	Y(ITA)	14Q1-14Q4	14Q2-14Q4
B	WP14/52/09	EU.01.52.01	FWC	Engineering Analysis and Support	Framework contract for the Engineering Support Independent Verification and Analysis.	N/A	14Q2	14Q4
A/B	WP14/52/04	EU.01.52.01	P serv	Engineering analysis and support	Task Orders and contracts for Engineering support for Launcher analysis. Mainly to be performed through task orders under the FWC WP14/52/05. 2014 activities will be focused on the independent verification of the EC UL and cooling system design.	Y,Y(ITA)	N/A	14Q2-14Q4

¹¹ Unique Beneficiary ECHUL-CA, Technical Competence

2.3.1.6.3 Plasma Engineering¹²

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/PE/09	EU.01.PE.01	FWC	System and control engineering	Activities and analyses related to the ITER control system	N/A	13Q4	14Q2
B	WP14/PE/01	EU.01.PE.01	G	ITER scenario and plasma performance analysis	Analysis and optimisation of the nominal ITER scenarios, including abnormal scenarios such as fast pulse termination	Y(ITA)	N/A	N/A
B	WP14/PE/02	EU.01.PE.01	G	Plasma Wall interaction and First Wall and divertor engineering studies	Analyses of the plasma wall interaction, computation of heat loads and engineering studies of the First Wall and divertor	Y(ITA)	N/A	N/A
B	WP14/PE/03	EU.01.PE.01	G	Disruption Modelling and simulation	Modelling and simulation of plasma disruptions. Computation of the loads on the machine structures	Y(ITA)	N/A	N/A

¹² Most of the activities in the area of Plasma Engineering are going to be implemented on the basis of competitive ITAs for which no planning is available from ITER IO; therefore no time of call or contract signature date is given for these activities

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP14/PE/04	EU.01.PE	Pserv	Engineering Support and analysis for plasma control disruptions and scenarios	Activities and analyses in support of the study of the plasma control system or the optimisation of the ITER scenarios	Y,Y (ITA)	N/A	14Q2-14Q4
B	WP14/PE/05	EU.01.PE.01	G	Additional heating systems analysis	Analysis of the additional plasma heating: definition of requirements, performance analysis and definition of interfaces (in particular with plasma control)	Y(ITA)	N/A	N/A
B	WP14/PE/06	EU.01.PE.01	P serv	Engineering Support and analysis for antennas	Activities and analyses in support of the study of the antennas.	Y,Y (ITA)	N/A	N/A
A	WP14/52/05	EU.01.PE.01	Pserv	EC control system analysis	Analysis of EC control system; development of preliminary architecture.	Y,Y (ITA)	N/A	N/A
B	WP14/PE/07	EU.01.PE.01	G	Plasma Engineering analysis	Analysis of plasma operations, plasma-machine interfaces and actuators	N	N/A	N/A
A/B	WP14/PE/08	EU.01.PE.01	Pserv	Plasma Engineering studies	Engineering studies of plasma systems, controls and design verification. Mainly to be performed as specific contracts under the Framework Contract WP13/PE/09	N	N/A	14Q2-14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/PE/09	EU.01.PE.02	G	Physics and engineering modelling for plasma control and scenarios	Development of physics plasma models and engineering models in support to the study of the plasma control system and scenario optimisation (i.e. plasma breakdown, transient events)	Y(ITA)	N/A	N/A
A	WP14/PE/10	EU.01.PE.02	PServ	Plasma control system design	Design of the Plasma Control System: collection and synthesis of requirements, development and test of the architecture.	Y(ITA)	N/A	14Q2-14Q3

2.3.1.7 Neutral Beam and Electron Cyclotron Power Sources and Supplies

2.3.1.7.1 Electron Cyclotron Power Sources and Supplies

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/52/03	EU.01.52.02	PSupply	Procurement of He-free Magnet	Supply of a superconducting magnet system for the European Gyrotron	Y	13Q3	14Q1

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/52/05 ¹³	EU.01.52.02	PSupply	Procurement of 2nd Prototype	Procurement of 2nd EU Gyrotron Prototype	Y	13Q2	13Q4
A	WP14/52/06	EU.01.52.02	G ¹⁴	Grant for Design & Development of EU Gyrotron - 2nd phase	Grant for Design & Development of EU Gyrotron - 2nd phase / part 2. New R&D activities for the validation of the EU Gyrotron for ITER and tests with the Gyrotron prototypes	Y(ITA)	14Q1	14Q2
A/B	WP14/52/07	EU.01.52.02	PSupply	Release of Option for the Contracts in the Electron Cyclotron and Power Sources and Supply area	Release of Options for the contract for Procurement of the Short Pulse Gyrotron (WP11/52/05), the 2 nd EU Gyrotron Prototype (WP11/52/05) and Body PS & Main High Voltage PS (WP12/52/02)	Y	N/A	2014
B	WP14/52/08	EU.01.52.03	FWC	Follow-up of the procurement of Body PS & Main HV PS	Framework Contract for the technical follow-up of the procurement of Body PS & Main HV PS	Y	14Q3	14Q4

¹³ Current planned signature for the procurement of the 2nd Prototype is December 2013 using budget from Global Commitment 2012. To mitigate the risk the contract signature is not achieved by the end of 2013 F4E has duplicated the financing decision in WP 2014. The duplication of the financing decision for the WP11/52/05 will not therefore imply the cancellation of the financing decision in WP2012

¹⁴ Unique Beneficiary EGYC Consortium (KIT, CRPP, HELLAS, CNR): technical competencies

2.3.1.7.2 Neutral Beam

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/53/08	EU.01.53.07	FWC	Infrastructures of the Neutral Beam Test Facility - Instrumentation & Control System	Framework contract for the procurement of instrumentation and control systems related to SPIDER and PRIMA experiments. Will be implemented by means of specific financing decisions.	Y	11Q1	14Q1
A	WP11/53/09	EU.01.53.07	FWC	Neutral Beam Test Facility - NBTF Diagnostics	Framework contract for the procurement of the diagnostics for the NB Test Facility. It will be implemented by means of specific financing decisions	Y	14Q1	14Q3
A	WP13/53/01	EU.01.53.07	PSupply	Infrastructures of the Neutral Beam Test Facility - Instrumentation & Control System	Specific Contract Spider Control 1 (FWC NBTF Instrumentation & Control System WP11/53/08)	Y	N/A	14Q2
B	WP13/53/04	EU.01.53.07	PSupply	Neutral Beam Test Facility - Procurement for MITICA Vessel	Supply contract for the procurement of the vacuum vessel of the MITICA experiment	Y	14Q2	14Q4
B	WP14/53/01	EU.01.53.07	PSupply	Infrastructures of the Neutral Beam Test Facility - Cryogenic system	Procurement for Cryogenic Plant for MITICA	Y	14Q2	14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/53/03	EU.01.53	P supply /P serv	Release of contractual options for the Neutral Beam contracts	<ul style="list-style-type: none"> • Release of options for contracts: • Contract for Consultancy Service for health & Safety and Work Site Coordination (WP13/53/08) • Vacuum and Gas Injection Plant (WP10/53/07) • Beam Source Measurement (WP10/53/07) • ISEPS: Temporary storage until Shipping of the power supplies (WP10/53/15) • HV Deck and Transmission Line (WP09/53/06) 	Y	N/A	14Q1-14Q3
A	WP14/53/04	EU.01.53.08	Pserv	Contract for health & Safety and Work Site Coordination Phase 1	Services for NBTf site: contract for health & Safety and Work Site Coordination	Y	14Q1	14Q2

2.3.1.8 Diagnostics

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/55/02	EU.01.55.08	G	Development and Design of High Resolution Neutron Spectrometer	Grant for the completion of system-level design and final definition of interfaces for High Resolution Neutron Spectrometer	Y	13Q3	14Q2
A	WP11/55/03	EU.01.55.12	G	Development and Design of High Resolution Neutron Spectrometer	Development and design of H-phase Hard X-ray Monitor to final design review level	Y	14Q2	14Q3
A/B	WP12/55/01	EU.01.55.06	SC	Irradiation and post-irradiation testing of diagnostic components and assemblies	Irradiation and post-irradiation testing services for prototype components and assemblies. Mainly performed through specific contracts within framework contract WP11/55/10.	Y, Y(ITA)	N/A	14Q1 – 14Q4
A	WP12/55/07	EU.01.55.01	Pserv	Design and Prototyping of Electronics for Real-Time Applications	R&D/Design from Functional Specification to Final Design level, of bespoke electronics for inductive sensors in the magnetics diagnostic. The principal component is a long-pulse integrator. Additional components include amplifiers and the interface between the analog front-end and digital back-end	Y	14Q1	14Q3

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP12/55/11	EU.01.55.14	FWC	Integration design of diagnostics into ITER ports- Framework Contract	Framework contract covering provision of design and engineering analysis services for coordination of diagnostic integration into upper, equatorial and lower ports; design and planning of associated radiation shielding modules and adaptation of port plug structures; definition and management of design interfaces; integration of baseline diagnostic designs and engineering analysis of integrated structures.	Y	12Q4	14Q1
A	WP13/55/04	EU.01.55.14	P supply	Magnetics diagnostic: Procurement of the continuous external Rogowski coil	Contract for the procurement and delivery of the continuous external Rogowski coil	Y	14Q2	14Q3
A	WP13/55/09	EU.01.55.14	SC	Integration design of diagnostics into ITER ports	Specific contracts under FWC WP12/55/11	Y	N/A	14Q2
B	WP13/55/14	EU.01.55.15	G	Mirror lifetime optimization	Grant covering research and development for mirror lifetime optimization	Y	14Q3	14Q4
A/B	WP14/55/01	EU.01.55	P supply	Prototypes & Test Equipment	2014 activities will include the manufacturing of prototypes for irradiation and conventional tests for different Diagnostics components	Y	14Q1-14Q3	14Q2 – 14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/55/02	EU.01.55.02	SG	Design and R&D for Bolometers	Specific Grants under the FPA for the Design of Bolometers Diagnostic (WP13/55/01)	Y	N/A	14Q1 – 14Q2
A	WP14/55/03	EU.01.55.03	SG	Design and R&D of Plasma Position Reflectometry	Specific Grants under the FPA for the Design of the Plasma Position Reflectometry (WP11/55/01)	Y	N/A	14Q1 – 14Q3
B	WP14/55/04	EU.01.55.05	G	Development and Design of Inner-Target Thermocouples	Integrated development and design activities of the inner target thermocouples, including design and prototyping of bonding to CFC/W as appropriate, modelling of target temperature derivation and support for divertor cable layout	Y	12Q4	14Q4
A/B	WP14/55/05	EU.01.55	FPA	Diagnostic Development & Design: Partnership agreement	Framework Partnership Agreements covering integrated development and design activities of the following diagnostic systems: -Core-plasma Thomson Scattering -CXRS	Y	13Q3/13Q4	14Q1-14Q4
A	WP14/55/06	EU.01.55.06	SG	Design and R&D for Tokamak Services	Specific Grants under the FPA for the Design of the Tokamak Services (WP11/55/01)	Y	N/A	14Q1 – 14Q2
B	WP14/55/09	EU.01.55.09	SG	Design and R&D for Core-plasma Thomson Scattering	Grant for the development and design of the Core-plasma Thomson Scattering	Y	N/A	14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP14/55/10	EU.01.55.10	SG	Design & R&D for the Low Field Side Collective Thomson Scattering	Specific Grants under the FPA for the design of the Low Field Side Collective Thomson Scattering (WP13/55/01)	Y	N/A	14Q1 – 14Q4
A	WP14/55/11	EU.01.55.11	SG	Design and R&D for Core-Plasma Charge Exchange Recombination Spectrometry	Specific Grants under the FPA for the design of the Core-Plasma Charge Exchange Recombination Spectrometry (WP14/55/05)	Y	N/A	14Q2 - 14Q3
A/B	WP14/55/13	EU.01.55.13	SG	Design and R&D for Equatorial visible - IR wide angle viewing system	Specific Grants under the FPA for the design of the Equatorial visible -IR wide angle viewing system (WP13/55/01)	Y	N/A	14Q1 – 14Q4
A	WP14/55/14	EU.01.55.04	SG	Design and R&D of Diagnostic Pressure Gauges	Specific Grants under the FPA for the design of the Diagnostics Pressure Gauges (WP11/55/01)	Y	N/A	14Q1
A	WP14/55/15	EU.01.55.07	SG	Design and R&D for Radial Neutron Camera and enabling of the Gamma Spectrometer	Specific Grants under the FPA for the design of the Radial Neutron Camera and enabling of the Gamma Spectrometer (WP11/55/01)	Y	N/A	14Q1 – 14Q2

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/55/16	EU.01.55.01	P supply	Procurement of Inner-Vessel and Outer-Vessel Flux Loops	Contract for Procurement and Delivery of Inner-Vessel and Outer-Vessel Flux Loops	Y	14Q1	14Q4
A	WP14/55/17	EU.01.55.01	SC	Development of CODAC and Software Support	Specific Contracts under FWC F4E- OFC- 361(WP12/45/02): Provision of Instrumentation and Control integration services	Y	N/A	14Q1

2.3.1.9 Site, Buildings and Power Supplies

2.3.1.9.1 Power Supplies

WP cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/41/01	EU.01.41.01	PSupply	TB06 Contract for Procurement, Installation and Commissioning PPEN/SSEN Equipments & Cables (Additional Activities)	Complementary expenditure for the Electrical Power Distribution TB06 Contract (WP13/41/01) Electrical Power Distribution TB06 Contract covers: procurement of PBS 43 equipment including cables and non-safety Relevant , and installation of PBS 41-PP and PBS 43 equipment	Y	N/A	14Q2

2.3.1.9.2 Site and Buildings

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP12/62/07	EU.01.62.02	Pserv	Independent concrete testing	Independent concrete testing	Y	13Q4	14Q2
A	WP13/62/06	EU.01.62.02	Pserv	PF Coil HSPC Services	PF Coil HSPC Services during PF coil manufacturing	Y	14Q1	14Q3
A	WP13/62/07	EU.01.62.02	SC	Contract for Site Security and Reception Services for the ITER Site	Provision of worksite access control and security -2014 activities – Jointly with IO	Y	N/A	14Q1
B	WP14/62/01	EU.01.62.02	Pserv	Engineering Support (Engineering counter-expertise for structural and geotechnical design and works execution)	Engineering counter-expertise for structural and geotechnical design and works execution, performed under the framework contract WP12/ES/01	Y	N/A	2014
B	WP14/62/02	EU.01.62.02	SC	Facility Management Services for the ITER Site 2014	Provision of worksite access control and security -2014 activities – Jointly with IO	Y	N/A	14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/C	WP14/62/03	EU.01.62.02	PSupply	Buildings Contract Amendments (PCRs cost impact) and alternative disputes settlements	Additional work linked to IO PCRs for the Construction contracts of ITER buildings. Additional expenditures related to alternative disputes settlements	Y	N/A	14Q1-14Q3
A	WP14/62/04	EU.01.62.02	P supply	Options for TB04 Contract	TB04 – Contract Options 17B, 18B, 15, 20, 24B, 22 & Optional Incentive Scheme TB04 – Contract Options 17B (IO/F4E cable trays for Group 3B), 18B (F4E cables for group 3), 15 (Post Taking Over RFE Services), 20 (Additional SDB/SDPs), 24 (Aluminium cables for groups 3A/3B), 22 (Lighting for Galleries for groups 3A/3B) & Optional Incentive Scheme	Y	N/A	14Q1
A	WP14/62/05	EU.01.62.02	P serv	Additional activities for Support to the Owner contract	Additional activities due to changes in AE contract	Y	N/A	14Q1
A	WP14/62/06	EU.01.62.02	P serv	Options of Support to the Owner Contract	Extension of the duration of the Support to the Owner contract regarding the AE contract evolution	Y	N/A	14Q2
A	WP14/62/07	EU.01.62.02	P supply	Options to TB05 contract	TB05 – Contract Options 2 (Cable trays IO Process), 6 (Operation and Maintenance) & 9 (Integrated commissioning)	Y	N/A	14Q2

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/62/08	EU.01.62.02	P serv	Additional activities - General Safety and Health Coordination Protection for ITER Building	Additional activities to the HSPC&LI Services linked to IO PCRs	Y	N/A	14Q2
A	WP14/62/09	EU.01.62.02	PSupply	TB02 – Contract Options	TB02 – Contract Options (One 50T crane weather proofing and erected, commissioned and tested directly in the Building 11)	Y	N/A	14Q2
A	WP14/62/10	EU.01.62.02	P serv	Architect Engineer Contract - option	Option for 20 additional months if Construction Supervision Activity	Y	N/A	14Q1

2.3.1.10 Test Blanket Modules and Material Development

WP cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP11/56/04	EU.01.56.02	PSupply	Procurement of EUROFER for TBM mock-ups	Procurement of EUROFER semi-finished products for TBM mock-ups.	N	14Q2	14Q4

WP cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP12/56/07	EU.01.56.02	FPA	Framework Partnership Agreement for the development, benchmarking, validation of predictive tools in view of TBS final design and future ITER application	Framework Partnership Agreement for the development, benchmarking, validation of predictive tools.	N	13Q4	14Q2
A	WP12/MD/01	EU.01.56.02	FPA	Structural materials characterization and design rules- Characterization of materials and welds	Characterization and validation of TBM structural materials base material and welds.	N	13Q4	14Q2
A	WP12/MD/06	EU01.56.02	SC	Materials characterization, irradiation and post irradiation	Mainly service contract to be implemented under FWC WP12/MF/12, OFC -167 and OPE-149 (WP11/MF/04).	N	N/A	14Q1
A	WP13/MD/06	EU.01.56.02	FPA	Structural materials characterization and design rules – Design rules and methodologies	Development of specific design rules and design methodologies.	N	13Q4	14Q2
A	WP13/56/02	EU.01.56.01	FWC	ANB consulting activities	Framework contract for support to the definition on ESPN categorization, o/and related design.	N	13Q4	14Q2

WP cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP14/56/01	EU01.56.01	SG	Specific Grants for R&D in support to the TBS design	Mainly specific grants to be implemented through the FPAs: WP12/MD/01, WP13/MD/06, WP12/56/07, WP11/56/03, WP11/56/07.	N	N/A	14Q1 – 14Q4
A/B	WP14/56/02	EU01.56.01	SC	Specific contracts in support to the TBSs Design Review (DR) preparation and outcomes implementation; related techno demonstration	TBS finalization of the CDR (chits resolution), preparation of PDR documentation, support to the PDR, resolution of PDR outcomes by design update and complementary analyses, complementary technological demonstration. Mainly to be performed through specific contracts under the frameworks: WP13/56/02, WP11/56/11.	N	N/A	14Q2 – 14Q4
A	WP14/56/03	EU.01.56.01	PServ	Engineering services in support of TBM induced ripple analyses	Calculation of total perturbed field, including plasma screening.	N	13Q4	14Q2

2.3.1.11 Technical Support Service

2.3.1.11.1 CODAC

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP13/45/03	EU.01.ES.03	FWC	Supply of fully loaded cubicles service	Supply of fully mounted and loaded cubicles. Includes design, manufacturing, testing, and shipping of cubicles and supply of components used in the process.	N/A	14Q1	14Q4
A	WP14/IC/01	MULTIPLE	PServ	Support on I&C design and implementation in the frame of EU PA's	Technical support to ICC (Instrumentation, Control & CODAC). Provision of professional services in the field of instrumentation and Control System Engineering and aiming to support F4E with the preparation of technical specifications and the follow-up of in kind contributions to ITER. Mainly performed through specific contracts within framework WP11/45/02.	Y	N/A	14Q2
B	WP14/IC/02	MULTIPLE	PServ	Procurement for I&C Integrator for all EU supplies	Preparation activities to start production of plant system interface to CODAC: training to IO standards and quality, efficiency improvements. Development of centralised control and monitoring for building construction. Integrate any available building to central monitoring. Mainly performed through specific contracts within framework WP12/45/02.	Y	N/A	2014

2.3.1.11.2 Nuclear Safety

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/SF/01	EU.01.NS.01	G	Supporting safety analysis to follow up ITER design evaluation and licensing process	Grant for Supporting Safety Analysis to Follow-up ITER Design Evolution and Licensing Process (2013).	Y(ITA)	14Q3	14Q4
A/B	WP14/SF/02	MULTIPLE	PServ	Supporting safety analysis to follow up ITER design evaluation and licensing process	Supporting safety analysis to follow up ITER design evaluation and licensing process .Mainly to be implemented through the ongoing framework F4E – OMF- 298.	Y,Y ITA	N/A	14Q1-14Q4

2.3.1.11.3 Materials and Fabrication

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP12/MF/12	EU.01.MF.01	FWC	Materials irradiation and post irradiation characterization	Provision of Irradiation and post –irradiation testing of materials for the ITER components.	N/A	13Q4	14Q1

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP12/MF/13	MULTIPLE	PServ	Materials irradiation and post irradiation characterization	Characterization of non-irradiated and irradiated XM19, SS660, NiAl Bronze, Inconel 718, XM19/316L(N)-IG welded joint and CuCrZr/316L(N)-IG explosion bonded joints. Mainly performed through specific contracts within framework WP12/MF/12.	Y, Y(ITA)	N/A	14Q2-14Q4
A	WP12/MF/14	EU.01.MF.01.	FWC	ITER specific raw material	Provision of small quantities of ITER specific raw material	N/A	13Q3	14Q2
B	WP14/MF/01	MULTIPLE	PServ	Material characterization at cryogenic temperatures	On demand material characterisation at cryogenic temperatures in the frame of construction and R&D of ITER components. Mainly performed through specific contracts within framework F4E OPE 084.	Y, Y(ITA)	N/A	2014
B	WP14/MF/02	MULTIPLE	PServ	Material characterization at room/elevated temperatures	On demand material characterisation in the frame of construction and R&D of components for ITER. Mainly performed through specific contracts within framework F4E OFC 167.	Y, Y(ITA)	N/A	2014
A	WP14/MF/03	MULTIPLE	PServ	Characterization of materials and joinings	Assessment of corrosion parameters at nominal of plasma operational conditions.	Y, Y(ITA)	14Q2	14Q3
A	WP14/MF/04	EU.01.MF.01	G	Assessment Material Fabrication route	Feasibility study of new manufacturing technology electron beam, laser sintering for ITER component.	Y, Y(ITA)	14Q2	14Q3

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A/B	WP14/MF/05	MULTIPLE	PServ	Joining technologies and non-destructive testing	On demand material and joining characterisation in the frame of construction and R&D of ITER components. Mainly performed through specific contracts within framework F4E OPE 149.	Y, Y(ITA)	N/A	14Q1-14Q4
B	WP14/MF/06	MULTIPLE	PServ	ITER specific raw material	Provision of small quantities of ITER specific raw material. Mainly to be performed through the Framework Contract WP12/MF/14.	N/A	N/A	2014

2.3.1.11.4 Engineering Analysis

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP12/ES/01	EU.01.ES.02	FWC	Dynamic Analysis	Seismic and Dynamic analysis of ITER buildings and components.	Y, Y(ITA)	14Q1	14Q2
A	WP12/ES/08	EU.01.ES.02	FWC	Nuclear Analysis	Definition of ITER nuclear analysis validation and quality assurance criteria; standardization of ITER nuclear analysis methods and tools.	N/A	13Q2	14Q1
A	WP12/ES/12	EU.01.ES.01.	FWC	Engineering Support – General Mechanic Plant System and Integration	Engineering support in the area of general mechanics plant system and integration.	N/A	13Q4	14Q2

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/ES/01	EU.01.ES.02	FWC	Electromagnetics Analysis	Electromagnetic analyses of ITER components.	N/A	14Q3	14Q1
B	WP13/ES/19	MULTIPLE	PServ	Nuclear Analysis Validation, quality assurance and standards for ITER nuclear analyses	Definition of ITER nuclear analysis validation and quality assurance criteria; standardization of ITER nuclear analysis methods and tools.	Y,Y(ITA)	N/A	14Q4
A/B	WP14/ES/01	MULTIPLE	PServ	Engineering Support – General Mechanic Plant System and Integration	Engineering support in the area of general mechanics plant system and integration. Mainly to be implemented through specific contracts under F4E-OPE-017 and WP12/ES/12.	Y, Y(ITA)	N/A	14Q1-14Q4
B	WP14/ES/02	MULTIPLE	PServ	Codes and Standards	Codes assessment in support of the design of the ITER components.	Y,Y(ITA)	N/A	2014
A/B	WP14/ES/03	MULTIPLE	PServ	Engineering Support-CAD support	Support in CAD design CAD checking and CAD exchange. Mainly performed through specific contracts within framework WP11/ES/07.	Y,Y(ITA)	NA	14Q1-14Q4
B	WP14/ES/04	MULTIPLE	PServ	Mechanical analyses	Mechanical analyses in support of PAs and ITAs. Mainly performed through specific contracts within frameworks. WP 13/ES/02 and WP12/ES/05	Y,Y(ITA)	N/A	2014

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/ES/05	MULTIPLE	PServ	Dynamic Analysis	Seismic and Dynamic Analysis of ITER buildings and components. Mainly performed through specific contracts within framework contract WP12/ES/01.	Y, Y(ITA)	NA	2014
B	WP14/ES/06	MULTIPLE	PServ	Electromagnetic analyses	Electromagnetic analyses in support of PAs and ITAs. Mainly performed through specific contracts within frameworks WP12/ES/03 and WP13/ES/01.	Y,Y(ITA)	N/A	2014
B	WP14/ES/07	MULTIPLE	PServ	Nuclear analyses	Nuclear analyses in support of PAs. Mainly performed through specific contracts within framework F4E-2008-OPE-02 and WP12/ES/08.	Y,Y(ITA)	N/A	2014
B	WP14/ES/08	MULTIPLE	PServ	Thermo-hydraulic Fluid Dynamic analyses	Fluid Dynamic analyses, including thermo hydraulics, in support of PAs and ITAs. Mainly performed through specific contracts within framework F4E-OPE-031.	Y,Y(ITA)	N/A	2014

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
B	WP14/ES/09	MULTIPLE	PServ	Metrology Support	Geometrical survey and data analysis for VV and Magnet component. On demand metrology services in the frame of manufacturing and R&D of components for ITER. Performed through specific contracts within framework WP13/ES/03.	Y,Y(ITA)	N/A	2014

2.3.1.11.5 Nuclear Data

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/ND/02	EU.01.ES.02	SG	Nuclear Data improvements and development of tools - Nuclear Data evaluation	Integrated R&D for the improvement of Nuclear Data libraries and related computational processing. Mainly performed through specific grants under WP11/ND/01.	N	N/A	14Q1

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/ND/04	EU.01.ES.02	SG	Nuclear Data, and experimental activities	Definition of irradiation campaigns for fusion relevant materials and layouts. Improvement of nuclear instrumentation for the nuclear test programme in ITER. Mainly performed through specific grants under WP12/ND/01.	N	N/A	14Q1
B	WP14/ND/01	MULTIPLE	PServ	Nuclear Data, and experimental activities	Nuclear Data and experimental activities.	N	N/A	2014

2.3.1.12 Project Office

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP13/PO/06	EU.01.PM.04	FWC	Support of Project Management –support for dual use	Framework Contract for project management services to support F4E dual use management activities. It will be implemented by means of specific contracts.	N/A	14Q1	14Q3
A/B	WP14/PO/01	EU.01.PM.03	P Serv	Support of Project Management	Outsourcing of planning activities on specific tasks. Mainly performed through specific contracts within framework WP11/PO/13.	Y, Y(ITA)	N/A	14Q1 – 14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/PO/02	EU.01.PM.04	PServ	Support for Dual Use	Outsourcing of Dual Use Consultancy. Mainly performed through specific contracts within Framework contract WP13/PO/06.	Y, Y(ITA)	N/A	14Q3
B	WP14/PO/03	EU.01.PM.08	Pserv	Global transportation of ITER components	Global transportation of ITER components (HEL, CEL, CL) and related studies including management of transport-related topics (i.e. customs, handling, gendarmerie, conventions, insurance, etc.) and additional activities on Test Convoy.	Y	N/A	2014
A	WP14/PO/04	EU.01.PM.01	P serv	Service of inspectors and auditors for (Test Blanket Modules and Material development programme contracts) follow-up	Support to F4E for surveillance and auditing work at the manufacturers' premises for running contracts. Mainly performed through specific contracts within frameworks WP11/PO/12 and WP14/PO/07.	N	N/A	14Q2
A/B	WP14/PO/05	MULTIPLE	P serv	Service of inspectors and auditors for ITER project contracts follow-up	Support to F4E for surveillance and auditing work at the manufacturers' premises for running contracts. Mainly performed through specific contracts within frameworks WP11/PO/12 and WP14/PO/07.	Y, Y (ITA)	N/A	14Q1 – 14Q4
A/B	WP14/PO/06	EU.01.PM	SC	Support of Project Management	Outsourcing of Project Management activities. Mainly performed through specific contracts within frameworks WP13/PO/15, WP13/PO/16 and FWC WP14/PO/17.	Y	N/A	14Q1 – 14Q4

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal commitment (year/quarter)
A	WP14/PO/07	EU.01.PM.01	FWC	Service of inspectors and auditors for ITER project contracts follow-up	Framework contract for support to F4E for surveillance and auditing work at the manufacturers' premises for running contracts. Will be implemented by means of specific financing decisions.	NA	14Q1	14Q2
B	WP14/PO/08	EU.01.PM.04	PServ	Support for Dual Use	Outsourcing of Dual Use Consultancy. Mainly performed through specific contracts within Framework contract WP13/PO/06	N	N/A	2014
A	WP14/PO/17	EU.01.PM.04	FWC	Supply of Project Management Services	Framework Contract for project management services to support F4E activities. It will be implemented by means of specific contracts. Cost management support and Risk Management.	N/A	2012	14Q1
A	WP14/PO/18	EU.01.PM.03	FWC	Support of Project Management on Planning and Scheduling	Framework contract for support to planning of EU in kind procurements.	N/A	14Q1	14Q2
A	WP14/PO/19	EU.01.PM.03	SC	Support of Project Management on Planning and Scheduling	Specific contract on planning activities performed through WP14/PO/18.	N/A	14Q2	14Q3

2.3.1.13 Budget allocation for Amendments, Price Indexation and alternative disputes settlements under ongoing contracts and grants

F4E may exercise contractual options, agree on alternative disputes settlements, may pay liquidated damages, late payment interests and other financial compensations that F4E may be obliged to pay under its contracts and amend grants and contracts covered by (a) financing decision(s) and without substantial change in such decision(s) under the following criteria:

- Total amendments to a contract or grant will not exceed 20% of the price of the initial contract or grant; and
- Aggregated value of the amendments will not exceed in 2014 3% of the 2014 ITER procurement/grant (Title III) budget.

Exercise of contractual options and amendments exceeding the thresholds under the above underlying criteria shall require a new prior financing decision. F4E may implement price indexation referred to in the signed contracts covered by (a) financing decision(s) and without substantial change in such decision(s) under the criteria that aggregated value of the indexation cost in 2014 will not exceed to 3% of the 2014 ITER procurement/grant (Title III) budget.

Implementation of indexation exceeding the threshold under the above underlying criteria shall require a new prior financing decision. Implementation of contract amendments or indexation that leads to a change in the contract value larger than EUR 10 million, independently of the above-mentioned percentages, shall require a new prior financing decision.

WP ref	Activity Type	Activity Title	Activity Description	Duration (months)	Credit Status	Time of Call (year/quarter)
WP14/PO/09	G	Amendments of ongoing Grants	Budget allocation for amendments of ongoing Grants	N/A	Y,Y(ITA)	N/A
WP14/PO/10	G	Amendments to ongoing Grants	Budget allocation for amendments on ongoing Grants	N/A	N	N/A
WP14/PO/11	P	Amendments and price indexation ongoing Procurements	Budget allocation for amendments and price indexation of ongoing procurement Contracts	N/A	Y,Y(ITA)	N/A

WP14/PO/12	P	Amendments to ongoing Procurements	Budget allocation for amendments on ongoing procurement Contracts	N/A	N	N/A
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2.3.1.14 Urgent activities in support of cost and risk assessment

Some activities (corresponding to a total of about 5 man-years) may be necessary to be carried out in the estimation of costs and in the assessment of risk during the course of the year. Such activities could be either grants or procurements under the 3.1 and 3.2 budget lines.

WP ref	Activity Type	Activity Title	Activity Description	Duration of (months)	Credit Status	Time of Call (year/quarter)
WP14/PO/13	G	Analysis for cost containment or risk assessment	On-demand, urgent analysis and engineering activities	N/A	Y,Y(ITA)	N/A
WP14/PO/14	G	Analysis for cost containment or risk assessment	On-demand, urgent R&D activities	N/A	N	N/A
WP14/PO/15	P	Analysis for cost containment or risk assessment	On-demand, urgent analysis and engineering activities	N/A	Y,Y(ITA)	N/A
WP14/PO/16	P	Analysis for cost containment or risk assessment	On-demand, urgent R&D activities	N/A	N	N/A

2.3.1.15 Contribution in Cash

2.3.1.15.1 Contribution to the ITER Organisation

This corresponds to the annual EU share of the contributions in cash to the ITER Organisation for its management, to be adopted at the ITER Council meetings in 2014. This contribution is for 2015. It will be committed in the last quarter of 2014 and will be paid to ITER IO in two payments in 2015.

2.3.1.15.2 Contribution to Japan

This cash contribution to Japan corresponds to the transfer of procurement responsibility from EURATOM to Japan under the supervision of the ITER Organisation. According to the request of the Court of Auditors, this line includes the total value of the cash contributions for all the signed JA procurements for which the procurement agreements to be signed in 2014. The conversion rate used for the calculation takes into account the forecasted rates for the years when the contribution will have to be paid. Adjustments may be required before the last payment to take into account any change in the conversion rate happened until that time. The 2014 Cash Contribution corresponds to the following Procurement Arrangements

PA number	Procurement Arrangement Title	Amount (klUA) to be committed with budget 2013
1.1.P2A-B.JA.01	Toroidal Field Magnet Structures 2A ¹⁵	46.260
PA 5.3.P6.JA.02	HNB Power Supply (NB #1 Cadarache)	20.296

2.3.1.15.3 NBTF Agreement

This cash contribution to the Consorzio RFX corresponds to the 2015 NBTF Work Programme and amendment of the 2014 NBTF WP implementing the agreement on the Neutral Beam Test Facility on credited and not-credited budget lines. The commitment for 2015 activities will be implemented after the F4E approval of the NBTF 2015 Work Programme and after the F4E approval of the 1st amendment of the 2014 NBTF WP. The main activities that will be performed in 2015 are:

- SPIDER integration, commissioning;
- Design of MITICA components and systems and, as applicable, support in the preparation of technical specifications;

¹⁵ Current planned signature date for the 1.1.P2A-B.JA.01 PA is IO Council in November 2013 using the budget 2013. Nevertheless, given the external constraints not under F4E control, there is the risk the PA will not be signed by the end of 2013 and an implementation with the budget 2013 will not be possible in 2014 under the current rules. The duplication of this activity in WP2014 does not mean therefore the cancellation of the financing decision as foreseen in WP2013.

- R&D activities and procurements for demonstration activities finalised to the verification and optimization of NB components;
- Modelling and physics studies directly related to the development of the components for the NB system;
- Support to F4E in the follow-up of procurements contract;
- Participation to technical meetings including interface meeting with IO and other Domestic Agencies;
- Provision of NBTF Host services like: technical support during installation, construction supervision, licensing and safety, provision of site specific information to IO, F4E, other DAs and contractors, insurance and balance of plants;
- Provision of site facilities to Third Parties, as applicable.

2.3.1.15.4 Contribution in cash for Site cooperation agreement and host agreement of F4E Suppliers at Cadarache

The Agreement on ITER Site collaboration between the ITER Organization (IO) and Fusion for Energy (F4E) set out the terms and conditions under which F4E and IO may share certain goods and services available at the ITER Site (including electrical power and water) and the Host Agreement between the IO and F4E set out the terms and conditions under which IO provide support to F4E with equipment and/or IT, Mail & Landline services.

2.3.1.15.5 Cash transfer to ITER IO for the Design and Procurement of Test Blanket Systems Connection Pipes

According to the IC-12 decision, the design and procurement of the Test Blanket Systems Connection Pipes and the associated provision of financial resources are transferred from F4E to the IO for the HCLL and the HCPB TBM Systems. The budget transfer to IO shall be executed in its entirety at the latest by July 1, 2014.

2.3.2 Broader Approach

2.3.2.1 JT-60SA

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal Commitment (year/quarter)
A	WP14/BA/01	EU.BA.02.03	PServ	Pre-Assembly of the JT-60SA TF Coils	Pre-Assembly of the JT-60SA TFC	Y (BA)	14Q2	14Q3
B	WP14/BA/02	EU.BA.01.01	PServ	Transportation to Japan PoE of the HTS Current Leads (TF)	Transportation from KIT (Karlsruhe) to JA PoE of the HTS Current Leads for the TF coils of JT-60SA	N	14Q4	15Q1
B	WP14/BA/04	EU.BA.01.01	PServ	Transportation to Japan PoE of the ALAT Cryoplant Components	Transportation to Japan PoE of the ALAT Cryoplant Components	N	14Q4	15Q1
A/B	WP14/BA/05	EU.BA.01.01	PServ	Transports on BA Framework Transport Contract	Transports for IFMIF/EVEDA, IFERC and STP contracted in the form of work order in the Framework contracts	N	14Q1/ 14Q4	14Q1-14Q4
A	WP14/BA/06	EU.BA.01.01	PServ	Transportation to Japan PoE of TF Coils	Transportation to Japan PoE of TF Coils	N	14Q2	14Q2

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal Commitment (year/quarter)
A/B	WP14/BA/07	EU.BA.02.01	Pserv	Engineering Support Studies	Engineering Support Studies, Validation Tests and Measurements for JT-60SA	N	14Q1/ 14Q4	14Q1-14Q4
A	WP14/BA/08	EU.BA.02.06	P supply	Material for the TF coils casing ¹⁶	Material for the TF coils casing	Y (BA)	14Q1	14Q1
A	WP14/BA/14	EU.BA.02.04	P supply	ECH Power Supplies	ECH Power Supplies	Y (BA)	14Q1	14Q2

2.3.2.2 IFMIF

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal Commitment (year/quarter)
B	WP14/BA/10	EU.BA.01.01	PServ	Transportation to Rokkasho site of Cryoplant	Transportation to Rokkasho site of Cryoplant	N	14Q4	14Q4

¹⁶ need for this contract dependent on ongoing tests

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal Commitment (year/quarter)
A/B	WP14/BA/11	EU.BA.02.01	Pserv	Engineering Support Studies	Engineering Support Studies, Validation Tests and Measurements for IFMIF	N	14Q1/ 14Q4	14Q1-14Q4

2.3.2.3 IFERC

WP Cat	WP Ref	F4E WBS	Activity Type	Activity Title	Activity Description	Credit Status	Time of Call	Legal Commitment (year/quarter)
A	WP14/BA/12	EU.BA.04.02	FWC	Framework contract for the implementation of Remote Experimentation Centre Activities.	Development of software for remote data access, analysis and simulation for REC/JT60-SA.	Y (BA)	14Q1	14Q3
A	WP14/BA/13	EU.BA.04.02	P serv	Specific contract for the implementation of Remote Experimentation Centre Activities.	Development of software for remote data access, analysis and simulation for REC/JT60-SA. Mainly to be performed through specific contracts under the framework WP14/BA/12	Y (BA)	N/A	14Q3

2.3.2.4 Cash Contribution

For IFMIF there is a two-component cash contribution to be considered for 2014, covering expenditure for Common Expenses for the PT, and a contribution to the Common Fund for Maintenance.

2.3.2.5 Budget allocation for Amendments and Price Indexation for ongoing contracts

F4E may exercise contractual options, may pay liquidated damages, late payment interests and other financial compensations that F4E may be obliged to pay under its contracts and amend grants and contracts covered by (a) financing decision(s) and without substantial change in such decision(s) under the following criteria:

- Total amendments to a contract or grant will not exceed 20% of the price of the initial contract or grant; and
- Aggregated value of the amendments will not exceed in 2014 2.0% of the sum of running contracts at the date of WP2014 first issue

Exercise of contractual options and amendments exceeding the thresholds under the above underlying criteria shall require a new prior financing decision. F4E may implement price indexation referred to in the signed contracts covered by (a) financing decision(s) and without substantial change in such decision(s) under the criteria that aggregated value of the indexation cost in 2014 will not exceed 3% of the 2014 BA Title III budget.

Implementation of indexation exceeding the threshold under the above underlying criteria shall require a new prior financing decision. Implementation of contract amendments or indexation that leads to a change in the contract value of EUR 10 million, independently of the above-mentioned percentages, shall require a new prior financing decision.

2.3.3 Other expenditures

2.3.3.1 Legal and Procurement support

In 2014 F4E will need specialist support from economic operators (by means of service contracts) for operational needs: this will include (where appropriate) legal and commercial services, including adjudicators of on-going contracts and provision to cover the Chairman and advisors fees in case of lost disputes in front of the adjudication Panel. Provision in this sense is included in the budget for 2014.

2.3.3.2 Experts with contract

F4E has issued calls for expressions of interest for individual experts to provide technical assistance in a number of specific areas related to ITER and the Broader Approach. Provision is included in the budget for a total of approximately 3400 expert man-days in 2014.

2.3.3.3 Consultancy services

A general provision is included in 2014 for the consultancy service for participation to specific ITER/F4E committees and support/advice to F4E Director.

2.3.3.4 Provisions for supply contracts for F4E staff

In view of the increasing demand of metrology services, analysis and surveys, it is foreseen to purchase a minimum set of tools to be used by F4E staff in the technical support services team to perform geometrical checks according component manufacturing schedule. Among the others it is worth to mention Vacuum vessel sector's and part's geometrical checks as well metrology driven assembly processes. Provisions for portable Metrology devices like laser trackers, laser tracker accessories and necessary tools to make surface scans and gap/step detection including all relevant software applications are included under the budget title 3.4.

2.3.4 Complementary expenditures for the contracts under Global Commitment 2013

F4E has foreseen that some activities under the Work Programme 2013 will be implemented under the Global Commitment scheme in 2014. Being the exact amount of the expenditure not known when the Global Commitment is made, provisions for a maximum of EUR 5 million, for complementary expenditures are made available in WP2014 to fulfill the needs as in the relevant award decisions.

WP ref	Activity Type	Activity name	Credited type	Legal commitment date (year)
WP14/PO/20	G	Complementary expenditure for Global Commitment 2013 activities for ITER project	N	2014
WP14/PO/21	G	Complementary expenditure for Global Commitment 2013 activities for ITER project	Y, Y(ITA)	2014
WP14/PO/22	P supply/serv	Complementary expenditure for Global Commitment 2013 activities for ITER project	Y, Y(ITA)	2014
WP14/PO/23	P supply/serv	Complementary expenditure for Global Commitment 2013 activities for ITER project	N	2014
WP14/BA/15	P supply/serv	Complementary expenditure for Global Commitment 2013 activities for Broader Approach	N/A	2014

The list of the procurement procedures for which the complementary expenditure might be needed is available below:

WBS Code L5	F4E-WP Ref	F4E-CA Type Code	Activity Name	Credited type
EU.01.11.03.53.03	WP13/11/07	PSupply	Contract for Winding Tooling Provision (TW)	Y
EU.01.15.01.51.02	WP13/15/09	PServ	Procurement of F4E VV Representative Inspector	Y, Y(ITA)
EU.01.16.01.52.14	WP13/16/09	PServ	CuCrZr Plates for the ITER FW Panels HIP manufacturing route	Y
EU.01.16.01.52.25	WP13/16/06	G ¹⁷	CuCrZr material for HIP manufacturing route	Y
EU.01.16.01.52.35	WP13/16/08	PServ	Contract for Technical Support for fabrication and commissioning of a HHF Test Facility	Y
EU.01.16.01.52.17	WP13/MF/05	G ¹⁸	Characterization of materials and joinings	Y, Y(ITA)

¹⁷ Single beneficiary Stockholm University, Unique Facility

EU.01.17.02.51.16	WP13/17/03	PSupply	Contract for Industrialization of the full W monoblock components	Y
EU.01.17.02.51.20	WP13/MF/04	G ¹⁹	Characterization of materials and joinings	Y, Y(ITA)
EU.01.23.01.91.08	WP12/23/02	G	Neutral Beam Remote Handling (NB RH) Design Follow-up Phase I	Y
EU.01.31.01.54.02	WP12/31/03	PServ	Procurement for final design and manufacturing of Warm Regeneration Lines	Y(ITA)
EU.01.52.03.51.02	WP12/52/02	PSupply	EC PS Main Contract (BPS & MHVPS)	Y
EU.01.53.06.51.05	WP11/53/01	PSupply	Procurement for Neutral Beam High Voltage Deck and Bushing - MITICA	Y
EU.01.56.02.04.06	WP13/56/03	G	Complementary Analysis for Tritium Migration Modelling in TBM systems	N
EU.01.PE.01.77.02	WP13/PE/02	PServ	Plasma Engineering analysis	N
EU.01.PE.01.77.04	WP13/PE/03	PServ	Plasma Engineering studies	N
EU.01.PM.08.91.05	WP13/PO/19	PServ	Gendarmerie Services Test Convoy (TC3)	Y
EU.BA.02.01.03	WP12/BA/14	PServ	Hydraulic Measurements	N/A
EU.BA.02.05.01	WP13/BA/04	P supply	Cryoplant Storage Tanks	N/A

2.3.5 Science and technology support for ITER and BA

2.3.5.1 Science and technology support for ITER and BA

In the first quarter of 2014 F4E will launch the procedure to award a framework contract to procure broad range science and technology support for ITER and BA projects.

¹⁹ Unique Beneficiary Studsvik Nuclear, Unique Facility

3 Annexes

3.1 Summary of the 2014 Work Programme

Commitment appropriation (EUR)

Budget line	Title	2014 Budget (December 2013)
3 1	ITER construction including site preparation	650,098,382.68
3 2	Technology for ITER	18,022,000.00
3 3	Technology for Broader Approach	11,870,000.00
3 4	Other expenditure	4,200,000.00
3 5	Appropriation from the ITER Host State contribution	170,000,000.00
Total Title III of the Budget 2014		854,190,382.68

Commitment appropriation (EUR)

Repatriation of activities by categories	cat A	cat B	cat C
	674,127,653.70	160,872,346.30	19,190,382.68
Total Title III of the Budget 2014	854,190,382.68		

Commitment appropriation (EUR)

Budget line	Title	2014 Work Programme (December 2013)		
		Grants	Procurement	Cash
3 1+3 5	Expenditure in support of ITER, credited by ITER IO through PA	17,671,000.00	504,409,978.68	
3 1+3 5	Contribution in cash in support of ITER (paragraph 2.3.1.15)			125,603,430.00
3 1+3 5	Contribution in cash to Japan (paragraph 2.3.1.15)			116,314,210.00
3 1+3 5	Contribution for site agreement (paragraph 2.3.1.15)			1,710,500.00
3 1+3 5	Contribution in cash on NBTF Agreement (paragraph 2.3.1.15)			2,815,410.00

3 1+3 5	Design and R&D in support of ITER, credited by ITER IO through ITA	7,605,000.00	17,091,000.00	
3 1+3 5	Amendment, Price Indexation, Dispute, etc. (paragraph 2.3.1.13)	758,280.00	26,119,574.00	
	Subtotals	26,034,280.00	547,620,552.68	246,443,550.00
3 1+3 5	Total ITER Construction	820,098,382.68		
3 2	Design and R&D in support of ITER, not credited IO	4,053,000.00	10,156,000.00	
3 2	Contribution in cash to IO for the Design and Procurement of Test Blanket Systems Connection Pipes (paragraph 2.3.1.15)			1,292,010.00
3 2	Contribution in cash on NBTF Agreement (paragraph 2.3.1.15)			2,094,660.00
3 2	Amendment, Price Indexation, Dispute, etc. (paragraph 2.3.1.13)	121,620.00	304,710.00	
	Subtotals	4,174,620.00	10,460,710.00	3,386,670.00
3 2	Total Technology for ITER	18,022,000.00		
3 3	Expenditure in support of Broader Approach		10,849,670.00	
3 3	Contribution in cash in support of IFMIF-EVEDA Project			203,680.00
3 3	Amendment, Price Indexation, etc. (paragraph 2.3.2.5)		816,650.00	
	Subtotals	0.00	11,666,320.00	203,680.00
3 3	Total Technology for Broader Approach and DEMO	11,870,000.00		
3 4	Appointment of experts for technical assistance to F4E (paragraph 2.3.3.2)			2,450,000.00
3 4	Legal and commercial services for assistance to F4E and supply for F4E staff (paragraph 2.3.3.1, 2.3.3.3 and 2.3.3.4)		1,750,000.00	
	Subtotals	0.00	1,750,000.00	2,450,000.00
3 4	Total Other Expenditure	4,200,000.00		
	Total expenditure by type	30,208,900.00	571,497,582.68	252,483,900.00
3	Total Operational Expenditure	854,190,382.68		

Notes

A table showing the indicative budget for grants to be awarded in this Work Programme, both credited and non-credited by ITER, is provided in 3.2.

- Figures corresponding to items to be credited by IO through ITA are provisional, and are based on the present understanding of the share of work to be assigned to F4E by IO with yearly planned ITAs (not competed) or through competitive procedures (competed ITAs).
- Following the evaluation of the proposals and updates on the cash contributions, the final budget repartition may vary by up to 10% of the specified budget figures in the table above, with the exception of the budget allocation.

3.2 Annex II: Summary of the Budgets for Grants

Work Programme 2014 (December 2013)

Work Breakdown Structure	Credited (EUR million)	Not Credited (EUR million)
Magnets	-	-
Vacuum Vessel	-	-
In Vessel	0.35	-
Remote Handling	0.8	-
Vacuum Pumping & Fuelling	-	-
Tritium Plant	-	-
Cryoplant	-	-
Power Supplies	-	-
I&C and CODAC	-	-
Heating & Current Drive	4.56	-
Diagnostics	16.53	-
Buildings	-	-
Test Blanket Modules and Material Development		2.96
Plasma Engineering	1.18	0.22
Technical Support Services	0.34	0.56
Analysis for cost containment and budget allocation (including complementary expenditures for Global Commitments 2013)	2.27	0.43
Broader Approach	-	-
Sub-Totals	26.03	4.17
Total		30.20

NB: Figures shown in this table are the currently estimated values. Modifications may occur within the budgetary constraints.

3.3 Annex III: Essential Selection and Award Criteria for Grants

With regard to grant actions referred to in this work programme, the essential selection and award criteria, in accordance with Articles 165 and 166 of the Implementing Rules of the Financial Regulation, are:

Essential Selection Criteria

- The applicants' technical and operational capacity: professional, scientific and/or technological competencies, qualifications and relevant experience required to complete the action.
- The applicants' financial capacity: stable and sufficient sources of funding in order to maintain the activity throughout the action.

Essential Award Criteria

- Relevance and quality of the proposal with regard to the objectives and priorities set out in this work programme and in the relevant call for proposals.
- Effectiveness of the implementation as well as of the management structure and procedures in relation to the proposed action.
- Cost-effectiveness and sound financial management, specifically with regard to F4E's needs and objectives and the expected results.

With regard to the specific action, more details will be provided in the call for proposals. Thresholds and weighting for the essential and additional award criteria will also be given in the call for proposals.

A proposal which does not fulfil the conditions set out in the work programme or in the call for proposals shall not be selected. Such a proposal may be excluded from the evaluation procedure at any time.

The timetable and indicative aggregated amounts for the actions are defined in this Work Programme.

3.4 Annex IV: Maximum Reimbursement Rates for Grants

The upper limits for the reimbursement of eligible costs for grants are laid down in Article 153 of the Implementing Rules of the Financial Regulation of the Joint Undertaking and are summarised in the following table.

Research, technological development and demonstration activities	40%
Purchase of durable equipment or assets and of ancillary services approved by the Joint Undertaking as necessary to carry out such activities	70%
Coordination and support actions	100%
Management, audit certificates and other specific activities	100%

3.5 Annex V: Abbreviation list

A/E	Architect Engineer	HIP	Hot Iso-static Pressing
AGPS	Accelerator Ground Power Supplies	HNB	Heating Neutral Beam
ALARA	As Low As Reasonably Achievable	HV	High Voltage
ANB	Authorized Notification Body	HVAC	Heating Ventilation & Air Conditioning
ANS	Analytical System	HVD	High Voltage Deck
ASN	Autorité de Sûreté Nucléaire	HW	Hardware
AVDEs	Asymmetric Vertical Displacement Event	HXR	Hard X-Ray
ATS	Air Transfer System	IC	Ion Cyclotron
BA	Broader Approach	I&C	Instrumentation and Control
BSM	Blanket Shield Module	ICH	Ion Cyclotron Heating
BtP	Build-to-Print	IFERC	International Fusion Energy Research Center
CD	Current Drive	IFMIF	International Fusion Materials Irradiation Facility
CFC	Carbon Fibre Composites	INB	Installation Nucleaire de Base
CMM	Cassette Multifunctional Mover	IO	ITER Organization
CVB	Cold Valve Boxes	IR	Infra Red
CVD	Chemical Vapour Deposition	ISEPS	Ion Source and Extraction Power Supplies
CXRS	Core plasma charge-eXchange Recombination Spectroscopy	ISS	Isotope Separation System
DA	Domestic Agency	ITA	ITER Task Agreement
DACS	Data Acquisition and Control System	ITER	International Thermonuclear Experimental Reactor
DCLL	Dual Coolant Lithium Lead	IVT	Inner Vertical Target
DCR	Design Change Request	IVVS	In-Vessel Viewing System
DEMO	Demonstration fusion reactor	JAEA	Japan Atomic Energy Agency
DIV	Divertor	LD&L	Leak Detection and Localization
DNB	Diagnostic Neutral Beam	LFS-CTS	Low Field Side – Collective Thomson Scattering
DTP	Divertor Test Platform	MAR	Materials Assessment Report
EAF	European Activation File	MDR	Modified Design Reference
EB	Electron Beam	MHB	Material HandBook
EBBTF	European Breeding Blanket Test Facilities	MHD	Magneto-Hydro-Dynamic
EC	Electron Cyclotron	MIG	Metal Inert Gas
EC UL	Electron Cyclotron Upper Launchers	MV	Medium Voltage
ECH	Electron Cyclotron Heating	NB	Neutral Beam
EFDA	European Fusion Development Agreement	NBI	Neutral Beam Injector
EFF	European Fusion File	NBPS	Neutral Beam Power System
ELM	Edge Localized Mode	NBTF	Neutral Beam Test Facility
EPC	Engineering Procurement Contract	NHF	Nominal Heat Flux
EUDA	European Domestic Agency	ODS	Oxide Dispersion Strengthened
EURATOM	The European Atomic Energy Community	ORE	Occupational Radiation Exposure
F4E	Fusion for Energy	P&ID	Process and Instrumentation Diagram
FS	Functional Specification	PA	Procurement Arrangement
FW	First Wall	PBS	Product Breakdown Structure
FWP	First Wall Panel	PBS 41	High Voltage and Medium Voltage distribution
HAZOP	HAZard Operability	PBS 43	High Voltage, Medium Voltage and Low Voltage distribution. Emergency Power Supply
HCLL	Helium Cooled Lithium-Lead	PE	Plasma Engineering
HCPB	Helium Cooled Pebble Bed	PF	Poloidal Field
H&CD	Heating & Current Drive	PFC	Plasma Facing Components
HHF	High Heat Flux	PFD	Process Flow Diagram
		PIE	Post Irradiation Examination
		PMU	Prototypical Mock-Up

PP	Procurement Package
PPC	Pre-Production Cryopump
PrSR	Preliminary Safety Report
PTC	Prototype Torus Cryopump
QA	Quality Assurance
R&D	Research & Development
RAFM	Reduced Activation Ferritic Martensitic
REM	Radiological Environmental Monitoring
RF	Radio Frequency
RFCU	Radio Frequency Control Unit
RH	Remote Handling
RMP	Resonant Magnetic Perturbation
RNC	Radial Neutron Camera
RWF	RadWaste Facility
RWM	Resistive Wall Mode
SC	Super Conductor
SDC	Structural Design Criteria/Code
SHPC	Safety and Health Protection Coordination
SiC-Dual	SiC/SiC composite material for electrical and thermal Insulation
SIP	Seismic Isolation Pit
S-NHF	Standard Normal Heat Flux
SOLPS	Scrape Off Layer Plasma Simulation
SS	Steady State
STP	Satellite Tokamak Programme
SW	Software
TBM	Test Blanket Module
TCS	Transfer cask System
TES	Test Extraction System
TF	Toroidal Field
TFC	Toroidal Field Coils
TFWP	Toroidal Field Winding Pack
TH	Thermal Hydraulical
TO	Technical Officer
UT	Ultrasonic
Vis	Visible
VS	Vertical Stability
VV	Vacuum Vessel
WAVS	Wide Angle Viewing System
WBS	Work Breakdown Structure
WDS	Water Detritiation System

3.6 Annex VI List of Framework Contracts and partnership agreements foreseen to be ongoing at the end of 2013

F4E-WPref	F4E-Work Programme year	Contract type	Procurement Code	WBS Code L6	FWC/FPA scope
N/A ²⁰	N/A	FwC	F4E-OPE-017	EU.01.ES.01.76.04.603	Engineering Support to F4E on General Mechanics
N/A	N/A	FwC	F4E-OPE-017	EU.01.ES.01.76.04.606	Engineering Support to F4E on Plant Systems
N/A	N/A	FwC	F4E-OPE-017	EU.01.ES.01.76.04.607	Engineering Support to F4E on Remote Handling
N/A	N/A	FwC	F4E-OPE-017	EU.01.ES.01.76.04.608	Engineering Support to F4E on Nuclear and Safety Engineering
N/A	N/A	FwC	F4E-2008-OPE-02	EU.01.ES.02.78.02.607	Eng. Support in the Area of Nuclear Analysis Systems and Components Analysis
N/A	N/A	FwC	F4E-OPE-031	EU.01.ES.02.79.01.609	Eng. Analysis in the Area of Thermo- Hydraulic and Fluid Dynamic Analysis (Lot 2)
N/A	N/A	FwC	F4E-OFC-167	EU.01.MF.01.76.16.603	Material characterization at room and elevated temperatures
N/A	N/A	FwC	F4E-OPE-084	EU.01.MF.01.76.19.603	Material Characterization at Cryogenic Temperatures
N/A	N/A	FwC	F4E-OMF-298-01	EU.01.66.01.01.02.605	ESS in the area of Compliance with ITER Safety Requirements
WP11/ES/05	WP11	FwC	F4E-OPE-031	EU.01.ES.02.79.01.608	Engineering support to F4E in the Area of Thermohydraulic (Lot 1)
WP11/45/02	WP11	FwC	F4E-OFC-169	EU.01.ES.03.91.02.603	Provision of System and Instrumentation Engineering Support
WP11/55/01	WP11	FPA	F4E-FPA-328	EU.01.55.06.51.24.603	Tokamak Services R&D/Design
WP11/55/01	WP11	FPA	F4E-FPA-327	EU.01.55.07.51.07.603	Radial Neutron Camera R&D/Design - Phase 1
WP11/56/03	WP11	FPA	F4E-FPA-380	EU.01.56.02.05.01.603	R&D in support to the finalization of the TBM Systems conceptual design (GFPA)
WP11/56/03	WP11	FPA	F4E-FPA-365	EU.01.56.02.08.01.603	R&D in support of ancillary systems conceptual design
WP11/56/07	WP11	FPA	F4E-FPA -372	EU.01.56.02.08.03.603	Experimental Activities in support of the design of HCLL and HCP
WP11/56/11	WP11	FwC	F4E-OMF-331	EU.01.56.01.02.01.603	Conceptual & Preliminary Design of TBMs set and analyses

²⁰Work programme references are not available for the framework contracts signed before 2011

WP11/56/11	WP11	FwC	F4E-OMF-331	EU.01.56.01.03.01.603	Conceptual & Preliminary design of TBS ancillary systems
WP11/56/11	WP11	FwC	F4E-OMF-331	EU.01.56.01.05.01.603	Conceptual & Preliminary Design of Maintenance Equipments
WP11/56/11	WP11	FwC	F4E-OMF-331	EU.01.56.01.06.04.603	Test Blanket Systems safety analyses
WP11/56/11	WP11	FwC	F4E-OMF-331	EU.01.56.02.03.02.603	Preliminary Welding Procedure Specifications for TBM box
WP11/ES/06	WP11	FwC	F4E-OMF-272	EU.01.ES.01.76.02.601	Engineering Support - Remote Handling
WP11/MF/04	WP11	FwC	F4E-OPE-149	EU.01.MF.01.76.22.603	Engineering Support on Joining and Non-destructive tests for production of ITER Components
WP11/ND/01	WP11	FPA	F4E-GRT-168	EU.01.ES.02.90.01.603	Development of Nuclear Data Files
WP11/PO/12	WP11	FwC	F4E-OFC-137	EU.01.PM.01.91.01.603	Quality Assurance Audits
WP11/PO/13	WP11	FwC	F4E-OFC-252	EU.01.PM.03.91.01.603	Provision of Planning & Scheduling Support Services
WP11/55/01	WP12	FPA	F4E-FPA-328	EU.01.55.06.51.24.603	Tokamak Services R&D/Design
WP11/ES/07	WP12	FwC	F4E-OMF-357-01	EU.01.ES.01.77.02.603	CAD Design Support - General Mechanical Design
WP12/45/02	WP12	FwC	F4E-OFC-361	EU.01.ES.03.91.04.603	Provision of Instrumentation and Control Integration Services
WP12/ES/05	WP12	FwC	F4E-OMF-356	EU.01.ES.02.76.11.603	Engineering Support in the area of Mechanical Analysis for the Vacuum Vessel
WP12/ND/01	WP12	FPA	F4E-FPA-393	EU.01.ES.02.90.02.603	Nuclear Data Experiments and Measurement Techniques
WP11/51/02	WP13	FwC	F4E-OMF-457	EU.01.51.01.02.02.603	Development of Built to print design of the ICH Antenna
WP11/55/10	WP13	FwC	F4E-OFC-358	EU.01.55.15.51.02.603	Irradiation Testing - Lot #1
WP11/55/10	WP13	FwC	F4E-OFC-358	EU.01.55.15.51.02.604	Irradiation Testing - Lot #2
WP13/55/01	WP13	FPA	F4E-FPA-407	EU.01.55.02.51.07.603	Design and R&D for Bolometers - Phase 1
WP13/55/01	WP13	FPA	F4E-OMF-0457	EU.01.55.10.51.04.603	Design and R&D for Low Field Side Collective Thomson Scattering
WP13/55/01	WP13	FPA	F4E-OMF-0468	EU.01.55.13.51.10.603	Equatorial Visible/IR Wide-Angle Viewing System
WP13/ES/02	WP13	FwC	F4E-OMF-457	EU.01.ES.02.76.13.603	Mechanical analyses of ITER components
WP13/ES/03	WP13	FwC	F4E-OMF-468	EU.01.ES.01.78.02.603	Metrological Support Services
WP13/PO/15	WP13	FwC	F4E-OMF-436	EU.01.PM.04.91.01.604	Project Management Services Lot 2 - Configuration Management & System Engineering

WP13/PO/15	WP13	FwC	F4E-OMF-436	EU.01.PM.04.91.01.606	Project Management Services Lot 3 - Project Management Systems
WP13/PO/16	WP13	FwC	F4E-OMF-436	EU.01.PM.04.91.01.610	Project Management Services Lot 5 - CE Marking Support

3.7 Annex VII: Mapping of Organizational breakdown structure (OBS- F4E units level) and Work Breakdown Structure (WBS level 3)

F4E Unit	WBS ref. (level 3)	WBS name (level 3)
Magnets	EU.01.11.01	Toroidal Field Coils
	EU.01.11.02	Pre Compression Rings
	EU.01.11.03	Poloidal Field Coils
	EU.01.11.04	Magnet Conductors
	EU.01.11.05	Magnets Common Activities
Vacuum Vessel	EU.01.15.01	Main Vessel
In Vessel	EU.01.15.02	Blanket Manifolds
	EU.01.16.01	Blanket and First Wall Panels
	EU.01.17.01	Divertor Cassette Body and Assembly
	EU.01.17.02	Divertor Inner Vertical Target
	EU.01.17.03	Divertor Rails
Remote Handling	EU.01.23.01	Remote Handling Common Activities
	EU.01.23.02	Divertor Remote Handling System
	EU.01.23.03	Transfer Cask System
	EU.01.23.04	In Vessel Viewing System
	EU.01.23.05	Neutral Beam Remote Handling System
Cryoplant and Fuel Cycle	EU.01.31.01	Cryopumps
	EU.01.31.02	Leak Detection and Localization System
	EU.01.32.01	Hydrogen Isotope Separation System
	EU.01.32.02	Water Detritiation System
	EU.01.34.01	Liquid Nitrogen Plant and Auxiliary Systems
	EU.01.64.01	Radiological and Environmental Monitoring System
	EU.01.66.01	Radiological and Conventional Waste Treatment and Storage
Antennas and Plasma Engineering	EU.01.51.01	Ion Cyclotron Antenna
	EU.01.52.01	Electron Cyclotron Upper Launcher
	EU.01.52.05	Electron Cyclotron Control System
	EU.01.PE.01	Plasma Engineering
	EU.01.PE.02	Plasma Control System
Neutral Beam and EC Power Supplies and Sources	EU.01.52.02	Electron Cyclotron Gyrotrons
	EU.01.52.03	Electron Cyclotron Power Supplies
	EU.01.52.04	Electron Cyclotron Power Supplies and Gyrotrons Common Activities
	EU.01.53.01	Neutral Beam Assembly and Testing
	EU.01.53.02	Neutral Beam Source and High Voltage Bushing
	EU.01.53.03	Beamline Components
	EU.01.53.04	Pressure Vessel and Magnetic Shielding
	EU.01.53.05	Active Correction and Compensation Coils
	EU.01.53.06	Neutral Beam Power Supplies
	EU.01.53.07	Neutral Beam Test Facility
EU.01.53.08	Neutral Beam Common Activities	
Diagnostics	EU.01.55.01	Magnetics
	EU.01.55.02	Bolometers
	EU.01.55.03	Plasma Position Reflectometry
	EU.01.55.04	Pressure Gauges
	EU.01.55.05	Inner Divertor Target Thermocouples
	EU.01.55.06	Tokamak Services
	EU.01.55.07	Radial Neutron Camera - Gamma Spectrometer
	EU.01.55.08	High Resolution Neutron Spectrometer
	EU.01.55.09	Core-plasma LIDAR Thomson Scattering
	EU.01.55.10	Low Field Side Collective Thomson Scattering
	EU.01.55.11	Core-Plasma Charge Exchange Recombination Spectrometer
	EU.01.55.13	Equatorial Visible/Infrared Wide-Angle Viewing System
	EU.01.55.14	Port Engineering Systems

F4E Unit	WBS ref. (level 3)	WBS name (level 3)
TBM and Materials Development	EU.01.55.15	Diagnostics Common Activities
	EU.01.56.01	European Test Blanket System Arrangement
Site and Buildings and Power Supplies	EU.01.56.02	Test Blanket Systems Research & Development
	EU.01.41.01	Electrical Power Distribution System
Technical Support Services	EU.01.61.01	Site Preparation
	EU.01.62.02	Buildings and Civil Infrastructures
	EU.01.ES.01	Engineering Support and Integration
	EU.01.ES.02	Engineering Analysis and Nuclear Data
	EU.01.ES.03	Embedded Control Data Access and Communication
Project Office and Control	EU.01.MF.01	Materials and Fabrication Technologies
	EU.01.NS.01	Nuclear Safety
	EU.01.CC.01	Cash Contributions to ITER Organization
	EU.01.CC.02	Cash Contributions to Japan Domestic Agency
	EU.01.PM.01	Quality Assurance
	EU.01.PM.02	Risk Management
	EU.01.PM.03	Planning and Scheduling
	EU.01.PM.04	Project Management
	EU.01.PM.07	Legal Specific Contractual Support (operational)
	EU.01.PM.08	Transportation
	EU.01.PM.09	Experts
JT-60SA	EU.01.PM.10	Annual Budget Reserve
	EU.01.PM.11	Assembly Coordination
	EU.BA.02.01	Satellite Tokamak (JT-60SA) Common Activities
	EU.BA.02.02	Toroidal Field Magnet
	EU.BA.02.03	Assembly
	EU.BA.02.04	Power Supply
IFMIF	EU.BA.02.05	Cryogenic System
	EU.BA.02.06	Materials
IFMIF	EU.BA.03.01	IFMIF-EVEDA Project Common Activities
	EU.BA.03.02	LIPAc Activities
IFERC	EU.BA.04.01	International Fusion Energy Research Centre Common Activities
	EU.BA.04.02	Remote Experimentation Centre
	EU.BA.04.03	Computational Simulation Centre