

Summary of the Proposed ITER Hot Cell Complex Procurement Strategy For Virtual Information Day on 4 June 2020

1. Introduction

Pursuant to the “Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project” (“ITER Agreement”), the purpose of the ITER Organization (the “IO”) is to provide for and promote cooperation among its Members (the Parties to the ITER Agreement) on the ITER Project, an international project that aims to demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes, an essential feature of which would be achieving sustained fusion power generation.

In this respect, the ITER Organization shall construct, operate, exploit and de-activate the ITER facilities.

The resources of the ITER Organization for the construction of the ITER facilities are of three types:

- Contributions in kind from the ITER Members, via their respective Domestic Agencies, such as specific components, equipment, materials and other goods and services in accordance with the agreed technical specifications or seconded staff;
- Financial contributions from the ITER Members, via their respective Domestic Agency, to the budget of the ITER Organization;
- Additional resources received either in cash or in kind within limits and under terms approved by the ITER Council.

Among the ITER facilities to be constructed is the ITER Hot Cell Complex (“HCC”) of the ITER Project. One part of the ITER HCC is to be procured by the ITER Members as contributions in kind while the other part is to be procured by the ITER Organization. Normally for in-kind contribution, it will be the ITER Domestic Agencies who will be a contract party and responsible for payment to the Industry, and for the latter, it will be the ITER Organization who will be responsible accordingly.

2. Scope of this document

This document summarizes the proposed procurement strategy for the ITER Hot Cell Complex (HCC) for the ITER Project (“HCC Procurement”). The intended use of this document is to communicate a summary of the procurement strategy as a first step towards inviting industry to participate in the upcoming procurements for the design and construction of the ITER HCC.

The document is part of the information package sent to industry for an information meeting with the industry to be held on 4 June 2020.

3. Background

The ITER HCC will be a large nuclear building of similar size as the ITER Tokamak Complex (“TKC”), and similarly, part of it is an in-kind contribution from the European ITER Member (EURATOM) via the European Domestic Agency (Fusion for Energy or F4E). The process equipment inside the building is primarily under the IO’s scope of work but there are also in-kind contributions from other ITER Members via their respective Domestic Agencies – the Japanese and the Russian ITER Domestic Agencies.

The procurement strategy for the HCC Procurement, as proposed herein, is an outcome of the IO-F4E’s intensive internal investigation to mitigate the potential Project risks observed in many industry sectors using the “conventional/traditional contracting schemes¹” and to respect the schedule and the available budget and has the goal of:

¹ For example, the fixed lump-sum contracts where the client and the contractor agree on a fixed price for the performance of the defined scope.

- Covering both design and construction phases of the ITER HCC facilities;
- Accelerating the ITER HCC construction schedule;
- Facilitating activities constrained by a budget;
- Share responsibility between the IO, F4E, designers, manufacturers and constructors; Including appropriate commercial arrangements (such as pain/gain, fixed fee aligned to milestone payments, etc.) amongst all parties to incentivize collaboration and encourage cross project risk mitigation as well as value engineering efforts; and
- Fully complying with safety and quality requirements of the ITER project as well as of any applicable regulations and instructions required by the French Nuclear Safety Authority.

4. Delivery Strategy

The strategy proposed for the design and construction of the ITER HCC is in a form of an alliance (the “Alliance”) between contracted companies (the “Contractors”) and the IO and F4E (Clients). The purpose of the Alliance is to bring all participants together to work as an integrated Alliance Project Team and by aligning the commercial interests of all the participants to the success of the Project by:

- Taking collective responsibility for achieving the required project outcomes;
- Carrying the project risks and opportunities collectively (particularly interface management);
- Sharing the financial success or failure of meeting the required outcomes.

As a result, all participants succeed or fail together, and no participant can win in isolation at the expense of the others.

There will be two phases of the HCC Procurement design and construction. The Alliance agreement will divide the works (the “Works”) necessary to complete each phase individually. The outcome of the design phase is the Works for the construction phase and a “Project proposal” which on top of the design of the Works will include a detailed schedule and a Target Price for the construction phase of the Works.

Each phase of the HCC Procurement will be separated by a robust stage-gate, preventing the next phase from commencing before the previous phase has been completed to satisfaction. This process follows the ITER design review process and thus the IO will retain technical control of the design in its role as Design Authority.

4.1 The Alliance

The IO will be the Owner/Nuclear Operator of the finished ITER HCC and therefore the Design Authority. F4E is responsible for procuring the HCC building and building services. In this respect both the IO and F4E will jointly act as Clients towards the Alliance.

The Alliance will be managed by the Alliance Management Team, led by the Alliance Manager. The Alliance Management Team reports to the Alliance Steering Committee, to be led by a representative of the Clients. The proposed organization of the Alliance is shown in Figure 1 below.

The Alliance Management Team (AMT) consists of the representatives from the IO and F4E as participants in the Alliance but also of nominees from each of the Contractors selected and appointed under the Alliance. Decisions within the Alliance shall be made on a consensus basis and all participants in the Alliance shall work under an “open book” commitment to each other and an Alliance auditor (the “Alliance Auditor”).

The IO and F4E intend to select and appoint jointly one main Contractor within the Alliance to perform the function of:

- Design integrator.

The IO intends to select and appoint two main Contractors to design and deliver within the Alliance the majority of the process equipment for:

- Radwaste Process Equipment;
- Remote Handling and Mechanical.

The F4E intends to select and appoint three main Contractors to design and deliver within the Alliance the majority of the construction scope:

- Civil Works;
- Building Services Works;
- Mechanical/Electrical Works.

All the Contractors selected and appointed by the IO and/or F4E shall become parties to the Alliance agreement, which will regulate the participants’ rights and obligations under the Alliance.

Three roles are identified that are not formally roles within the Alliance, these roles will work as Alliance support to the IO and F4E. The Alliance Expert will support the IO and F4E to create the Alliance. As such, the Alliance Auditor and a cost expert (the “Cost Expert”) will, throughout the HCC Procurement, work as independent reviewers of the Alliance performance and provide input and recommendations to the IO and F4E as needed.

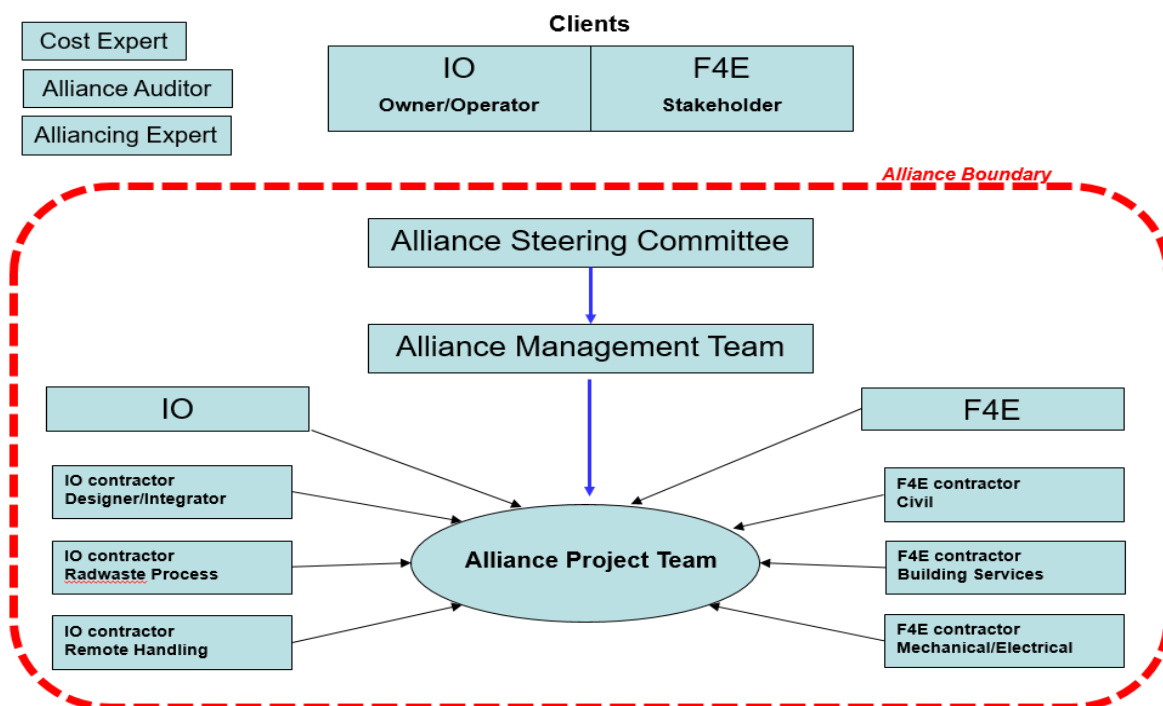


Figure 1. Main participants in the ITER HCC Alliance

4.2 Costing and payment

The proposed commercial arrangement is based on payment of the Contractors’ actual cost plus fee as well as incentivization based on collective performance of all the participants.

F4E is responsible for procuring the ITER HCC building and building services. The IO and F4E retain control of the cost by placing and declaring a cap on the available budget and through constant monitoring of the evolving forecast outturn cost by the Cost Expert. The Alliance will be managed by the Alliance Management Team.

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The pre-tender engineering (resulting from the on-going ITER HCC Conceptual Design activity) and tender specifications must be accurate and complete and include all mandatory essential preferences. To give the Alliance designers flexibility to develop the lowest cost design, preferences will be restricted to essential requirements.

For the Alliance to work, the Alliance participants must remain motivated and be given a fair opportunity to receive an incentive payment, decisions must be made on a best-for-Project basis, not only technically but also with regard to cost. Attempts by the IO or F4E towards preferential engineering, which may reduce future incentive payments to the Alliance participants must be avoided or, alternatively, will be considered as a change of scope and will require a change to the incentive (e.g. in a change to the Target Price of the ITER HCC).

It shall be noted that any decision by the Clients (the IO and F4E) that impact the incentive must be compensated by a change in the HCC Target Price, subject to conditions stipulated in the Alliance agreement.

4.3 Collaboration

One key parameter for the Alliance to function is collaboration and in order to achieve this, the following has been foreseen:

- The participants agree to collaborate while performing the Works and aim to achieve together a value for money outcome of the Works;
- The participants agree to respect the cooperation on the long-term and to remain in and not to opt out of the Alliance during the duration of the project;
- The participants agree to relate the profit that they can individually make on the HCC Procurement to the common result achieved together by all the participants;
- The participants agree to develop the solutions for the HCC Procurement collaboratively on the basis of what is best-for-Project;
- The participants agree to make an “open book” commitment to each other and the Alliance Auditor in respect of the Project;
- The participants agree to act at all times in good faith in exercising their rights and performing their obligations under the Alliance agreement;
- The participants commit to the promotion and maintenance of a “no-blame” culture between the participants and the prompt and mutual resolution of all disputes, differences and other issues by all the participants;
- The participants agree to exhibit the right behaviors that place the collective success of the Project at the heart of their relationships, and agree to be bound by a common set of values based on mutual trust and cooperation.

5. ITER HCC high-level schedule

Currently, the Conceptual Design of the ITER HCC buildings, radioactive waste and remote handling systems are being elaborated within the IO and F4E with the goal of freezing the input requirements for the Alliance by the end of 2020.

The procurement procedures to select and appoint the Contractors within the Alliance, allowing for early contractor involvement, will start towards the end of 2020 and will extend into 2021, with the aim of commencing the work on preliminary, final and construction design in late 2021. This will be followed by ITER HCC building construction starting in 2025.

During the tender assessment stage the procurement procedure will not only consider a tenderer's offering to perform their base scope of works (e.g. civil construction) but also their ability to work collaboratively (and overall fit) with other potential participants of the proposed Alliance and align with the requirements of the Alliance agreement.

6. Summary

The proposed alliance procurement strategy is very different from the conventional/traditional contracting schemes widely used in different industry sectors. The Alliance procurement strategy aims at ensuring the delivery of the ITER HCC on schedule and on time. It does so by the following:

- Establishing an integrated project team – an Alliance – of key participants to the HCC Procurement (the IO, F4E, designers, manufacturers, constructors, installers, etc.), which collaborate to innovate, and solve problems;
- Designing and constructing the ITER HCC as an integrated facility;
- Establishing a commercial arrangement which facilitates collaboration;
- Aligning the commercial interest of participants to motivate collaboration and reject individual self-interest;
- Providing the Contractors the financial incentive by only rewarding successful delivery the ITER HCC within budget and schedule;
- Eliminating risk premium in Contractors' prices;
- Sharing the management and cost-impact of risks;
- Eliminating disputes and commercial claims;
- Engaging manufacturers and constructors early on to support the design so that manufacturing and construction issues are resolved as part of the design phase before more costly manufacturing and construction commences.

In addition to all of the above, it has the following advantages for the HCC Procurement:

- It streamlines the procurement duration by allowing some tendering to proceed in parallel – up to one year appears to be recovered in the schedule;
- It reserves authority to the IO to perform as Owner and Nuclear Operator of the ITER HCC and Design Authority, as well as F4E in its role as Client.

Despite being a more collaborative, integrated delivery model compared to what has been implemented by the IO and F4E before, it nevertheless maintains commercial competition, the ability to demonstrate value for money and ensures that participant's commercial returns arising from their involvement in the Project are commensurate and aligned with the outcomes and performance the IO and F4E require.

The Alliance procurement strategy outlined in this document of course requires refinement, but all indications so far confirm that this delivery method is ideally suited to the HCC Procurement and its ability to deliver the facility within schedule and budget.