

Hot Cell Complex (HCC) - ITER Organization

Market Survey

Your Company's Name	
Website	
Contact Person #1 email address	
Contact Person #2 email address	

Introduction and Background

ITER Project is an international fusion energy project, with contributions from seven Members. In the case of the ITER Hot Cell Complex (HCC), the EU ITER Member through its Domestic Agency, Fusion for Energy (F4E), is responsible for the building and building systems, whilst the ITER Organization (IO) itself is responsible for most of the process systems that will populate the future facility.

The HCC is the main maintenance facility of the ITER Tokamak (TKM).

It is fulfilling the maintenance function of the TKM maintenance operation, the maintenance of the TKM Remote Handling System and the Radioactive Waste Management.

The HCC is sub-divided into a southern part that needs to be ready in December 2028 in order to support the TKM at PFPO (Pre Fusion Plasma Operation) and at the early stage of the DT phase (see Figure 1). The second, northern part of the building will be fully completed and commissioned later on, for the treatment and storage of Type B waste (also called MAVL corresponding to "Medium Activity, Long Life Radionuclide").

The HCC itself is a nuclear concrete building, 85m wide, 110 m long, 11m underground with 2 basement levels and 23m above ground with 3 levels.

The process includes heavy handling operations (up to 50t transfer) in a hazardous environment due to the In Vessel Components that have been irradiated and contaminated both by tritium and activated dust in the TKM machine. Therefore, many operations are performed within shielded cells and remotely controlled.

The building construction, the related utilities (e.g. door systems, HVAC, Liquid & Gas), the Radwaste process and the Hot Cell Remote Handling Systems are F4E and IO procurement packages respectively.

The conceptual design activities are being performed in 2019 and 2020, followed by 3 years for the preliminary and final design phase, then 4 years for the construction and finally 1 year

for the assembly and commissioning of the process in 2028.

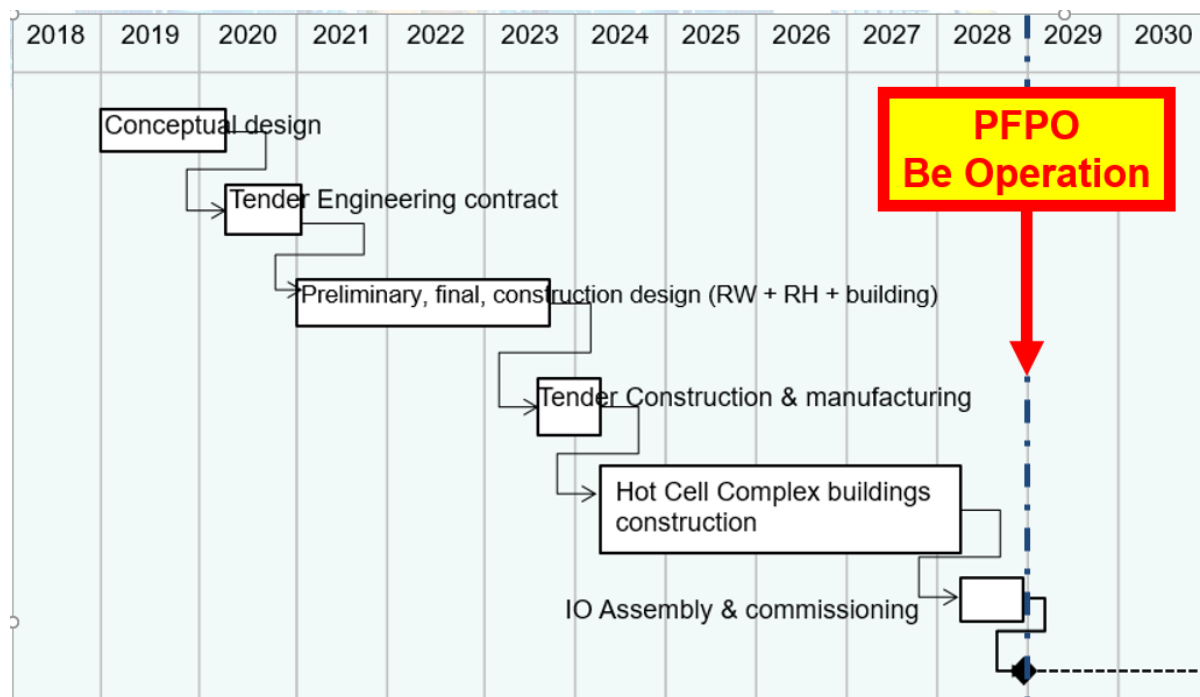


Figure 1 Long-Term schedule for the ITER Hot Cell Complex

IO/F4E is reviewing its procurement strategy for the design and the construction phases of the HCC and is soliciting constructive suggestions on this topic from companies interested in participating in any of the phases mentioned above.

We wish to engage with the market on the most appropriate procurement and contract strategy for the successful delivery of the HCC; success in terms of nuclear safety, quality, schedule and whole life cost.

We would be interested in having industry views/feedback/lessons learnt on a number of topics presently under internal discussion.

As of today, this is an open topic and we are not imposing any boundaries on suggestions and feedback from industry.

Should you be interested in providing us your views / feedback, thank you in advance for returning the following questionnaire to Daphné Crowther (daphne.crowther@iter.org) and Andrew Brown (andrew.brown@iter.org).

The Questionnaire

In the context of this project i.e. complex, first of a kind and regulated by the ASN where the role, obligations and authority of the IO as “Owner and Operator” need to be taken into account:

1. Present briefly the capability and experience of your company with respect to the present scope of work for the design and/or construction and/or installation works.
2. Present briefly your experience of the following topics:
 - (A) Best practices employed,
 - (B) Factors contributing towards project success,
 - (C) Factors contributing towards project failure,
 - (D) Lessons learned.
3. Please share your views on the following procurement delivery methods particularly in the context of this project i.e. complex and regulated by the ASN and any associated risks and how these may be shared:
 - (A) Single-contract EPC (turnkey) awarded to a grouping of contractors,
 - (B) Multi package contracts with specialized integrators connected through an interface agreement or EPCM contract,
 - (C) Collaborative contracting: enterprise and alliancing delivery methods,
 - (D) Other delivery methods.

Within each package referred to above:

- (A) Early contractor involvement and how this is achieved within the context of public procurement,
 - (B) Separate design then build,
 - (C) Combined design and build,
 - (D) Other possibilities.
4. Risks and opportunities:
 - (A) Views on risks and opportunities? Key risks, their ownership and how they can be mitigated (avoided, reduced, or managed)?
5. Financial:
 - (A) Views on open book pricing?
 - (B) Views on incentivisation programs, e.g. target cost with pain and gain mechanism, KPIs, success fees and bonuses?
 - (C) Views on the pricing method and payment scheme of a contract for the HCC considering the first-of-a-kind nature and complexity of the project: lump sum,

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target cost with pain and gain mechanism, time and material, cost plus fee, etc.
Would you envisage different pricing methods in different phases of the project?
If so, why?

(D) Views and relative importance on factors influencing the price of both the design and the construction?

(E) Views on 'designing to a price' and how this can be achieved?

6. Contractual relationship:

(A) Your experience with relational contracting (that may be described as collaborative contracting, lean contracting, project partnering, alliancing, or Integrated Project Delivery, etc.)? What is your view on these concepts?

(B) Views the various appropriate standard form of contract (e.g. FIDIC, NEC, others.)?

7. Working arrangements:

(A) Views on working in co-located / integrated project teams with the owner and its several contractors?

8. Pre-assembly and Modulization

(A) Views on pre-assembly of components and systems and the extent of modulization before delivery to site

Important notes

- **Please add any information that you feel may be of interest but that is not covered under the headings above. All and any inputs are welcome.**
- The information provided by your company will be kept confidential.
- There is no restriction on companies expressing their own views / options.
- Not all questions need to be answered
- **PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE TO:**

Andrew.Brown@iter.org and

Daphne.Crowther@iter.org

On or before Monday 6 May 2019 5pm CET.

The IO/F4E may contact you to clarify some points upon receipt of your documentation.