

Getting More from Current Reserves

Looking 'Beyond' EOR

This is an open invitation to any organisation from any sector to take the opportunity to submit proposals of conceptual ideas that provide an innovative approach towards finding step change solutions to increasing oil recovery factors and production of additional hydrocarbon.

Justification

ITF members, major operating and service companies in the oil and gas sector, met recently at an international ITF Technology Challenge Workshop (TCW) and explicitly identified the need for forward thinking to recover and produce more hydrocarbons.

Who Should Respond

The invitation is open to all relevant industry sectors and all credible entities from small and medium sized enterprises, to academic and research institutions, to large industry players alike.

How to Participate

Your contact points and outline method for submitting a proposal are provided in this document but you can immediately learn how to submit a proposal by going to our website <http://www.oil-itf.com/index/submit-a-proposal>

Alternatively you can ring us and talk to one of our analysts about your idea, +44 (0)1224 222410.

The Challenge

"If I had asked people what they wanted, they all would have said faster horses!"

Attributed to Henry Ford

"Beam me up Scottie!"

Attributed to James T Kirk (fiction)

As the global population grows by the middle of this century we will need to be generating 50% more energy and producing 50% less CO₂. Looking 'beyond' EOR is all about trying to significantly improve the recovery factors of oil fields in a sustainable development.

It could be considered, in an historic context that we are very close to an oil peak within the current 'Oil Age' and at the dawn of a low carbon future. Nevertheless, we have not run out of oil, far from it, but we have come to a point that there is no longer any 'easy oil'. Evidence shows discoveries and the average size of discovered fields have been reducing significantly over the past several decades; whilst at the same time the industry has been improving production efficiency. However, our oil age will run out when oil becomes too expensive, or alternatives become cheaper, or we need to stop producing hydrocarbons due to an imperative need to mitigate climate events. Some pundits estimate this at the turn of the century (2100).

With existing technologies 30-40% of oil is still left in the ground. Technically all oil can be produced; the challenge is to release the 'immobile' oil. The prize can be significant, for example, a one percent increase in recovery factors on a global scale will allow recovery of oil equivalent to the size of, for example, Norwegian reserves past, present, and known future.

Current IOR/EOR technologies have and will create value for operators, but so far this has been very much on a small incremental scale. In order to make step changes we need to think 'out-of-the-box' to move beyond the here and now and release the solutions of tomorrow. We need to consider all aspects of the oil and gas operations in order to achieve maximisation of recovery.

This call is about the future not a repetition of the status quo. The ITF members are not seeking the 'faster horses' they are seeking a move from the space shuttle into the Star Trek era.

Whilst many challenges exist around 'faster horses' if we are to make significant breakthrough in this field then we need to think out-of-the-box and look beyond what we are doing now and think about what we need to do for the next 10-40 year horizon.

Qualifying Technologies

Incremental change ideas will not be acceptable; the request is seeking challenging and truly innovative out-of-the-box thinking.

In order to qualify for potential sponsorship, technologies submitted in response to this Call for Proposals must:

- Look beyond current conventional approaches and applicable to the challenge
- Be conceptual/feasibility studies
- Be less than £50,000 in value
- Have a novel, or innovative element
- Have an 'out-of-the-box' approach

Qualifying Organisations

Proposals are invited from any organisation including SME's, academia, research institutions, large organisations, consortiums or alliances. Proposals may be submitted by a national or international organisation, and equal opportunities will be extended to all proposers. Please keep in mind however that should your proposal be taken forward, you will be required to participate in meetings and make presentations to interested parties in the UK and in the English language (teleconference and video conference are acceptable).

ITF's Role & Approach

Whilst the ITF evaluation process will be used for this call there will be a slight departure from the norm in that projects are expected to be of small value proof-of-concept studies (<£50,000).

The Industry Technology Facilitator (ITF) is a not for profit organisation owned by, and with access to funds from major oil and gas operating and service companies that comprise its membership. ITF has an impressive track record in delivering finance to help develop new initiatives for oil and gas technologies from early stage joint industry projects (JIPs) through to field trials and commercialisation. Since 1999, ITF has supported over **170** projects worth more than **£50 million** in funding. ITF's key objectives are to identify technology needs, foster innovation and facilitate the development and implementation of new technologies.

A fundamental element of ITF's role as an internationally recognised champion for facilitating research, development and deployment of technology innovation within the upstream oil and gas industry is to engage with key industry sources. ITF uses a proven process, working in collaborative participation with both its Members and industry to identify technology needs and potential solutions.

The ITF process, illustrated below as a step-by-step course of actions, endeavours to bridge the gap between the industry's large global players and development community with the ultimate aim of implementing new technology solutions:

STEP 1 - Understand and Identify Technology Needs

STEP 2 - Engage the Development Community / Invite Proposals

STEP 3 - Evaluate Proposal Submissions

STEP 4 - Secure Funding

STEP 5 - Assist the Launch of JIPs

STEP 6 - Facilitate the Implementation of Technologies

ITF has contractual confidentiality arrangements with all its Members and will enter into a parallel agreement with all developers submitting proposal applications. Proposals will be

submitted to our Members only for the purpose for which they are provided, i.e. assessment for funding support and implementation.

Proposals submitted under this Theme will be reviewed for financial sponsorship by **all ITF Members** therefore this is an excellent opportunity to gain a global audience in seeking support for your technology. The focus of all ITF themes is to identify technologies which bring clear benefits to sponsors but which require assistance in **research, development, and / or field trial.**

For details of ITF's full Portfolio of Members, please visit our Website - www.oil-itf.com

Technology Challenge Timeline

The ITF Technology Challenge follows a staged timeline from the initial workshop through to launch of successful projects. The following list of tasks describes the key milestones and their associated date:

- Call for Proposals Issued Nov 2011
- ***Deadline for Receipt of Proposals*** ***27 Jan 2012***
- Publish to Members for Review Feb 2012
- Member Review and Voting Mar 2012
- Award challenge winners Apr/May 2012

Process for Submitting a Proposal

1. Register Interest with ITF

Register your interest as early as possible by sending an email to Anthony Onukwu at a.onukwu@oil-itf.com

2. Visit the ITF Website - www.oil-itf.com

On the ITF Home page, click on the "How to Submit a Proposal" button or follow [this link](#) to access all the information required to submit a proposal.

3. Read the 'Project Application Guidance' Document

This document is available to view or download from the 'ITF Downloads' / 'Proposal Submission' section of the ITF Website. Reading this document prior to submitting a proposal is essential. If you require further clarification or are unsure if your proposal is suitable for submission, please call ITF (Contact Information below).

4. Download and Complete the 'Project Application Form'

This form is available to download from the 'ITF Downloads' / 'Proposal Submission' section of the ITF Website.

5. Download and Complete the 'Project Presentation Template'

This template is available to download from the 'ITF Downloads' / 'Proposal Submission' section of the ITF Website.

6. Email the Completed 'Project Application Form' and 'Project Presentation Template' to ITF

Email the Completed 'Project Application Form' in Microsoft Word format (not PDF) and the 'Project Presentation Template' in Microsoft PowerPoint format (not PDF) to Anthony Onukwu at a.onukwu@oil-itf.com by **no later than 27 January 2012**. Proposals received after this date may not be processed.

ITF Contact Information

If you would like to discuss any matters related to this call or any other issue related to ITF, please contact any of the following people:

Technology challenge manager and primary contact point for this Call:

Anthony Onukwu - Senior Technology Analyst

Email: a.onukwu@oil-itf.com

Tel: +44(0)1224 222417

Keith Mackie – Technology Manager

Email: k.mackie@oil-itf.com

Tel: +44 (0)1224 222418

David Liddle – Director Strategic Technology

Email: d.liddle@oil-itf.com

Tel: +44 (0)1224 222413

Contact Address for all of the above:

ITF

The Enterprise Centre

Exploration Drive

Bridge of Don

Aberdeen

UK

AB23 8GX

Tel: +44 (0)1224 222410 (Switchboard)

For more information on ITF please visit the ITF Website - www.oil-itf.com