

## Midterm Evaluation of PETROSENTER

### Terms of Reference

#### 1. Framework for the evaluation

##### 1.1. Introduction

Two research centres were established in 2013 as a result of the Government's white paper Meld. St. 28 (2010–2011) «An industry for the future – Norway's petroleum activities». The white paper Meld. St. 7 (2011–2012) «The High North» is a key document for one of the centres.

The research centres are time-limited, and are characterized by broad objectives, a long-term perspective and a targeted focus in order to solve identified challenges for exploitation of the Norwegian petroleum resources. It is also important that the centres stimulate researcher training in fields of importance to the user partners and encourage the transfer of research-based knowledge and technology.

It is required that the centres are co-funded by the host institution, research partners, user partners and the Research Council of Norway. The user partners are expected to actively participate in the governance, financing and research activities at the centres, and must conduct significant innovation activities of their own as well as be able to take advantage of the research results when developing their activities.

The centres have been established for a maximum period of eight years: an initial five year period with the possibility of a three-year extension.

##### 1.2. Purpose of the evaluation

The evaluation will form the basis for a decision about whether to continue the individual centre for the remainder of the overall eight-year term, or to wind it up after five years. The evaluation will also give advice to the centres on aspects of their activity that should be improved. The evaluation will be carried out as a peer review.

##### 1.3. Background for PETROSENTER

The PETROSENTER activity is funded by the Ministry of Petroleum and Energy (15 mill. kroner annually) and the Ministry of Foreign Affairs (5 mill. kroner annually). The centres were established through two different calls with dead-lines February 13, 2013 and May 29, 2013 respectively. A summary is given here, and the information to the applicants will be provided to the evaluation panel.

*Research and knowledge centre for petroleum activities in the northern areas and the Arctic*  
Many of the undiscovered resources are expected to lie in the Norwegian Sea and Barents Sea. Exploration activity must be carried out as a part of a comprehensive marine management regime. Petroleum activities in the northern areas and the Arctic will be challenging and require new knowledge and technology.

The funding to the Research Council for this centre is provided by the Ministry of petroleum and energy and the Ministry of foreign affairs (equal shares). The objective is to develop a high-quality research and knowledge centre of relevance to the oil industry in the northern areas and the Arctic. Industry-oriented researcher training and long-term knowledge-building are crucial. Research and knowledge-building activities should result in local and regional value creation and spin-off effects.

The application type [Knowledge-building project for industry](#) was used in the call. This application type requires collaboration with Norwegian industry, and the industrial partners must provide cash financing to cover a minimum of 20 per cent of the total project costs. In-kind contributions from the industrial partners cannot be included in the budgets. The call specified however that the applications should preferably be planned with a larger budget framework than the minimum requirement to co-financing so that the Research Council's share of funding comprises about 50 per cent of the project costs. The application type has a standardized template for the project description and standardized evaluation criteria.

#### *Research Centre for improved oil recovery on the Norwegian continental shelf*

The current adopted plans provide an average expected recovery rate of 46 per cent for oil and 70 per cent for gas on the Norwegian Shelf (Meld. St. 28 (2010–2011)). The funding is provided by the Ministry of Petroleum and Energy. The objective is to develop knowledge, competence and technology for development and operation of reservoirs at the Norwegian continental shelf in order to achieve a higher recovery rate than the current plans.

The research and competence-building should take place in close collaboration with operators and stakeholders on the Norwegian continental shelf. New knowledge and technology from the centre should be applicable in the operator's implementation of new measures for improved volumetric sweep and new injection methods for recovery of immobile oil.

The application type [Other support](#) was used and amendments or additions to the general requirements were described in the call for proposals. Collaboration with the industry/user partners was required. The Research Council of Norway will fund a maximum of 50 per cent of the centre's annual budget. At least 50 per cent of the centre's annual budget must be funded by the centre's consortium comprised of the host institution, company partners and research partners. The company partners in the consortium shall contribute at least 25 per cent of the budget on their own.

The centres to be evaluated are:

<b>Project no</b>	<b>Project title</b>	<b>Host institution</b>
228107	Research Centre for Arctic Petroleum Exploration	University of Tromsø
230303	National IOR Centre	University of Stavanger

## **1.4. Organisation of the evaluation**

### **1.4.1. The evaluation panel**

The centres will be evaluated by a panel of international experts. The panel will consist of five members with a generalist, who is experienced in research-based innovation, and four scientists with the following profile:

- Geology
- Reservoir technology

- Geophysics
- Environmental risks

The Research Council will aim at selecting scientific experts with broad experience. The same panel will be used for both centres. Each centre will be invited to suggest up to five suitable scientific experts. The Research Council will decide whom to invite. One of the members of the panel will be appointed as the panel leader.

#### **1.4.2. Methodology**

The evaluations will be carried out on the basis of written background material and interview sessions during a site visit.

#### **1.4.3. Background material for the evaluation**

The following written material will form the background for the evaluation:

*Report from Centres* according to a standardized outline, from the individual centre featuring relevant information, including:

- A self-evaluation of the centre including sections on research accomplishments, important industrial or social results and potential for innovation, network, internationalisation, recruitment, financial aspects and organisation. The self-evaluation will also contain a research plan for the final three years.
- A fact sheet according to a template including CV for the management team, data for the staff working in the centre, list of publications, PhDs. candidates, financial data and selected indicators.
- A report and self-evaluation from the host institution
- A report and self-evaluation from each of the user partners
- A report and self-evaluation from each of the research partners
- Report from Scientific Advisory Board/Scientific Committee (for centres which have established this)
- Annual reports from the centres (2014, 2015, 2016)

*From the Research Council*

- INFORMATION FOR APPLICANTS Research and knowledge centre for petroleum activities in the northern areas and the Arctic
- INFORMATION FOR APPLICANTS Research Centre for improved oil recovery on the Norwegian continental shelf
- For each centre
  - Present contracts including project descriptions
  - Special stipulations in the Research Council decision in 2013
- A fact sheet on PETROSENTER scheme

#### **1.4.4. Site visit**

During the site visit the evaluation team should meet:

- The Centre Leader
- The Chair of the Centre Board
- Representatives from the industrial and/or public partners
- Representatives from collaborating research institutions
- Host institution staff incl. representatives from the top management
- Research leaders active within the Centre
- Doctoral students

The Research Council staff will be present at the site visits. The staff will act as administrators and should not take active part in the evaluation, but can add information during work sessions. The site visit will be carried out according to a standardized agenda.

### **1.5. Time frame**

April 26, 2017: Decision of the evaluation mandate by Division board for Energy, Resources and Environment

September – November 2017: Site visits and reporting

December 13, 2017: Presentation of the evaluation report to the Division board for Energy, Resources and Environment

The background material will be distributed by The Research Council of Norway to all members of the evaluation team not later than one month prior to the site visits.

## **2. Mandate for the Evaluation Panel**

The evaluation will review progress of scientific and industrial efforts, recognising it is early to expect conclusive results. The evaluators will form an opinion concerning the approach and measures taken so far by the individual centres to judge the potential for their long-term development towards a successful completion of the projects. Evaluators may offer suggestions for remedial action to enhance the prospects for centre success. The evaluation and suggestions for remedial actions must be within the framework of the calls and the contracts between the Research Council and the host institutions.

### **2.1. Success criteria**

The evaluation team will make the evaluation in the context of the success criteria (Appendix 1).

### **2.2. Relevance to the call and special stipulations**

In addition to the success criteria, the evaluation should also assess:

- to which extent the centre activities are fulfilling objectives in the calls (relevance).
- to which extent the centres have succeeded in fulfilling any special stipulations in the decision made by The Research Council's board committee.

### **2.3. Not to be included**

To avoid giving a premature indication of The Research Council's decisions to prolong the individual centres, the evaluation panel shall not comment specifically on this issue.

### **2.4. The evaluation report**

The evaluation report should be written in consensus by the evaluation team and sent to The Research Council of Norway, no later than six weeks after the site visits. The report must include individual reports for each centre. Before submission to the Research Council of Norway the centres shall be allowed to check draft reports for factual errors. The report should be written in English.

The report will be openly circulated to the centres, host institutions, relevant ministries and to any other agency or person who have expressed interest for this kind of information.

The report should include comments on the self-evaluation reports and the site visit. Although the individual centres will be the main focus, the evaluators should also comment on the organisation of PETROSENTER scheme and the role of The Research Council of Norway.

## **Appendix 1**

### **Attachment: Success criteria<sup>1</sup>**

The following criteria will likely be relevant in assessing the success of the centre throughout its period of operation:

#### **Research**

- The centre has a clearly-defined research profile, performs long-term, thematically relevant research of high international calibre within the area set out in the project description, and demonstrates this through the achieved doctoral degrees, scientific publications, presentations at respected international conferences and other forms of scientific recognition.
- The centre's activities are multidisciplinary, i.e. it links together various fields within science and technology subjects.
- Researchers from the host institution and the research partners actively participate in the centre's research activities.

#### **Relevance and utility for users**

- The centre is visible in national and international arenas where questions concerning petroleum activities and the recovery of petroleum resources are discussed.
- The centre has implemented measures to ensure that the expertise and results generated through research are effectively transferred and utilised by the user partners and, in general, works actively with the dissemination of research results to a broader range of user groups and the public at large.
- There is reciprocal mobility of personnel between the centre and centre partners.
- The centre's user partners have over time increased their research involvement as a result of their participation in the centre's activity.

#### **Internationalisation**

- The centre has distinguished itself internationally (e.g. the researchers have received awards or invitations to participate as keynote speakers at international conferences).
- The centre has achieved good standing in international research collaboration.
- The centre is involved in active, binding collaboration with international research groups and has contributed to the internationalisation of Norwegian research in other ways. The centre has at least one international partner of some renown.
- The centre attracts cutting-edge foreign researchers, both fellowship-holders and senior personnel, as guest researchers.

#### **Researcher training and recruitment**

- The centre promotes researcher training in an effective manner and helps to educate highly qualified personnel within its areas of focus.
- The centre has an educational programme, particularly at the master's and doctoral levels, and promotes recruitment in the centre's scientific areas, including increased recruitment of women researchers.

#### **Partners and funding**

- The centre has long-term funding from the host institution and its partners.

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<sup>1</sup> There are some differences between these success criteria and criteria in the calls. If the evaluation panel finds these differences significant, priority should be given to the calls.

- The centre actively works to attract new partners.
- The centre has been successful in obtaining funding from other external sources.

### **Organisation**

- The centre has achieved a highly visible profile, a distinct identity and a successful collaboration with its partners.
- The centre is organised in a manner that is closely aligned with the host institution's organisation.
- The centre has a board and management that ensure that the intentions and plans underlying the establishment of the centre are fulfilled.
- The centre has a unified management that has a strong degree of scientific and administrative independence.