

---

# TENDER DOCUMENT - ANNEX 1

*Acquisition and processing of short offset and dense sampling 3D seismic data  
on the Norwegian Continental Shelf, 2016*

*Ref no 2016/357*



**NORWEGIAN PETROLEUM  
DIRECTORATE**

---

## Contents

1	Seismic data acquisition- and processing programme.....	3
2	Project timing and funding.....	3
2.1	Project timing .....	3
2.2	Project funding .....	3
3	Technical specifications.....	3
3.1	Data acquisition.....	3
3.2	Navigation/Positioning specifications .....	4
4	Data quality .....	4
5	Seismic data processing .....	5
6	Data delivery and final products .....	5
6.1	General .....	5
6.2	Data delivery .....	5
6.3	Reporting.....	6
7	Costs .....	6
7.1	General conditions .....	6
7.2	Production rate .....	6
7.3	Standby rate .....	6
7.4	Transit rate .....	7
7.5	Mobilization and demobilization.....	7
7.6	Seismic data processing .....	7
	Sesmic data processing data processing cost should be stated in one of the following two ways: ...	7
7.7	Early termination fee.....	7
8	Contract conditions .....	8

## **1 Seismic data acquisition- and processing programme**

NPD wish to acquire and process a dense sampling and short offset 3D seismic dataset in the late summer of 2016.

In the Barents Sea numerous shallow depth research wells exist. Also in 2015 NPD conducted a programme of shallow depth research wells in the Barents Sea. Further to this, NPD now wish to acquire and process a short offset and dense sampling 3D seismic dataset – in order to provide the best possible ‘tie’ to one of these shallow well locations.

The desired survey volume will be around 50 km<sup>2</sup>. NPD will revert with details of the specific survey area as soon as possible after the decision has been made in this respect.

Due to the nature of changes to the ice-edge, fishing activities and/or changes to the survey programme – the schedule and scope may be modified / changed during the cruise - in agreement with NPD and Contractor.

## **2 Project timing and funding**

### **2.1 Project timing**

The timing of the seismic acquisition programme is critical due to ice-edge extend, weather conditions and fishing activities. NPD therefore prefers that the acquisition is done within the time period as from mid-August to late September. The Contractor must provide an account of vessel availability. The acquisition is under all circumstances conditional upon NPD and the Contractor reaching a mutual agreement concerning the time period for the acquisition.

### **2.2 Project funding**

This project is conditional upon funding from the Norwegian Government. At this point in time, we cannot be sure to have all funds secured to cover the full data volume as indicated in Section 1.

The NPD assumes that the question of funding will be clarified and resolved before the signing of the contract.

## **3 Technical specifications**

### **3.1 Data acquisition**

The acquisition of the 3D short-offset seismic streamer data should be performed with the highest quality industry equipment and geometries.

As we wish to survey in northern waters - we will require the bidder to provide an accurate description of the survey vessel’s Ice Classification and the vessels ability to survey in such northern waters. (This applies both to the Seismic Vessel as well as eventual Support Vessels).

Bidders are required to provide documentation with a proper description and particulars of the geophysical benefits of their streamer system, as well as a description of other attributes and

---

benefits of such system. In particular, towing and towing depth, hereby weather (productivity) impact should be described.

### 3D Survey parameters:

No. of streamers:	up to 18 (and not less than 12)
Streamer separation:	12,5 m
Streamers active length:	100 – 150 m
Group interval:	6,25 m
No. of hydrophones per group:	Please specify
Streamers tow depth:	2.0 m (nominal) – 5.0 m (nominal) / and dependent on pre-survey geophysical evaluation & streamer technology.
Near-offset:	Distance center Source to first receiver group, 70-110 m? Or as close as operational feasible – Please specify options.
Shot (pop) interval:	6,25 m (for ‘single source’ shooting)
Source volume: array / layout.	500 – 1000 ci.in., please specify - and provide details of proposed
Source depth: evaluation.	3.0 m or 4.0 m (nominal). - And dependent on pre-survey geophysical
Record length:	Please specify capability for continuous recording
Sampling rate:	0,5 ms

Available options for the acquisition geometry and source configurations shall be specified. The bid should contain a detailed technical description of proposed equipment.

### 3.2 Navigation/Positioning specifications

The bidder should make use of an industry standard navigation system.

The bidder shall specify in detail the navigation system which will be applied for the 3D seismic acquisition.

The bidder is responsible for navigation supply. Navigation data shall be processed by bidder in order to produce final positions for each source and trace.

The centre of sources shall at all times be determined better than +/- 5 m. Receivers shall at all times be determined better than +/- 10 m. Both figures shall refer to a confidence level of 95%. Please also indicate in case your positioning spec. differs from the above

### 3.3 Additional services

Provision of one Support/Scout/Work- boat for the planned survey shall be quoted or included in the prices specified in Section 7 in this document.

## 4 Data quality

The bidder shall provide Quality Control during the acquisition- and processing of the data.

---

For the seismic acquisition programme, vessels that are constructed, equipped and operated in accordance with relevant requirements from the competent Authorities in the country of registration and from a first class international classification bureau approved by IACS, shall be used.

The bidder shall describe his routines for quality control of the data, using acceptable, industry standards such as “Procedures and Specifications for Field Operations and Data Processing” as an appendix to the response to tender.

The bidder shall:

- Give details of the vessel to be used and all its maritime equipment (sources, streamers, navigation and positioning system). The vessel and the equipment should satisfy the highest industry standards.
- Give a description of the vessel and relevant equipment for carrying out the assignment and copies of relevant certifications.

The bidder shall describe his seismic QC system for recording, monitoring and analysis of seismic and navigation data.

All equipment, instruments and other materials supplied by the bidder are subject to approval by the NPD before commencement of the survey acquisition.

A representative of NPD shall be onboard the survey vessel at all times for quality control. This does not, however, exempt the bidder from his responsibility of delivering all products to the specified acceptable standard / quality. In addition, a fisheries representative will also be required to be onboard (this cost will be covered by NPD), and other NPD personnel (if decided by NPD) will be onboard during the acquisition.

## **5 Seismic data processing**

The bidder shall provide a proposed solution including eventual alternative solutions for the Data Processing. In particular the Contractor shall describe its preferred route to perform 3D data-binning and -regularization.

## **6 Data delivery and final products**

### **6.1 General**

Raw 3D seismic data:

The bidder shall deliver raw 3D acquired seismic data on 3592 tapes as standard SEG-D. All navigation data shall be delivered on a suitable medium in standard UKOOA P1&P2 format.

All raw seismic data and all navigation data shall with no undue delay, and in any case no later than three weeks after survey completion, be shipped to NPD’s offices in Stavanger.

### **6.2 Data delivery**

The following list of data shall be delivered to NPD:

---

- 
- Two copies of seismic field data on 3592 tapes in SEG-D format.
  - Navigation data, UKOOA P2/94 and P1/90 on 3592 tapes.
  - TOC files including tape-, acquisition- and FFID logs on CD-ROM.
  - CMP map on CD-ROM and one paper copy.

### 6.3 Reporting

The following reports shall be delivered to NPD:

- Observers' Logs, Navigation Logs and Tape Logs on CD-ROM
- On-board Seismic Processing QC and Calibration Report (delivered on completion of fieldwork) on CD-ROM
- Final acquisition reports on CD-ROM and one paper copy.

## 7 Costs

### 7.1 General conditions

- All costs shall be stated in NOK.
- All conventional navigation costs, surface positioning and in-sea positioning shall be included in the acquisition cost.
- Costs related to equipment performance and acceptance tests shall be covered by the bidder.
- The bidder shall allow adequate time, at no cost to NPD, for checkout by NPD of all systems (including seismic, navigation/positioning equipment) under operating conditions, i.e. with streamer(s) and energy sources deployed and test shots recorded. A formal start of operations is conditional upon a satisfactory checkout.

### 7.2 Production rate

Production rates shall be stated in the following way:

Daily production rates (24 hours) when performing the seismic data acquisition.

The following costs shall be included in all rates stated:

- Costs for geophysical survey planning
- Costs for logistical survey planning
- All the specified processing (including post-processing of navigation data to UKOOA P1/90 format), end products and consumables (tapes etc.)

### 7.3 Standby rate

Standby rate shall be stated as rate per day (24 hours).

Standby time is classified as time spent on:

- Waiting on weather
- Waiting due to seismic interference or other circumstances (e.g. fishing activity)

- 
- Waiting due to marine conditions preventing or delaying the seismic operation to go-head, outside control of the contractor – also including time spent on port calls and other steaming on specific request by company
  - Waiting due to Force Majeure
  - Non-operational periods due to instructions received from the Company to delay the Work

The breakdown of timing regarding production and standby shall, on a daily basis, be agreed between the Party Chief and the NPD representative on-board. The bidder's breakdown standards on this issue must be part of the tender documentation.

Downtime due to technical breakdown and Contractor's Crew Change must be covered by the bidder.

#### **7.4 Transit rate**

Transit rate classified as steaming and transit to and from survey areas.

Transit rate shall be stated as rate per day (breakdown to 24 hours).

#### **7.5 Mobilization and demobilization**

The exact position(s) for the survey is to be decided and Contractor shall suggest alternative harbors for mobilization and demobilization for the Barents Sea. The costs shall be stated as Lump Sums.

However, irrespective of the chosen port of mobilization please add a "Mobilization Steaming Cost" in the following way: Based on "port of Hammerfest" – quote this "Mobilization Steaming Cost" as a rate per day (breakdown to 24 hours). Again, this Rate applies in addition to the lump sum of 'mobilization and demobilization'.

The mobilization period shall be regarded as finished when the equivalent of one prime line in each survey direction has been successfully recorded, and all equipment work correctly as far as it can be reasonably demonstrated to the satisfaction of the NPD's representative on-board. The production time will then be counted from the first accepted shot point on the first accepted line. The production time will cease at the last pop/shot thereafter vessel/operation will demobilize. The demobilization is completed upon in-port delivery of field-recordings and demobilization of NPD personnel.

#### **7.6 Seismic data processing**

Seismic data processing cost should be stated in one of the following two ways:

- 1) Stated as a "per kilometre" price/rate.
- 2) Included in the data acquisition rates.

#### **7.7 Early termination fee**

See standard contract conditions annex 2 – General Conditions of Contract.

## 8 Contract conditions

The NPD will use a revised version of the NPD 2010 standard contract - which again is based on IAGC standard contract conditions. These terms and conditions are enclosed to the tender document in annex 2 – 5.

The bidder should complete schedules B- I, listed in annex 3, as appropriate.

Minor reservations with reference to specific contract clauses must be quoted with alternatives, cf. tender document section 6.2 Disposition of tender, “DOC05 – Contractual”

**This type of procedure does not allow for contract negotiations.**

Significant reservations by the bidder regarding the terms stipulated in this bidding invitation, in the competition specifications or the contractual terms may affect his chances of being awarded the contract.

We specially refer to the Norwegian public procurement regulations of 7<sup>th</sup> of April 2006 no 402 § 20-13 d. According to this, an offer shall be rejected if the bidder has made significant reservations to the contract conditions.

The contract (GCC) contains a prohibition against social dumping, cf. clause 4.1.8

The NPD is obliged by law to use this clause in our contracts. Reservations against this clause will be regarded as significant reservations and will lead to rejection of the bid.