1. SCOPE OF WORKS

ENGINEER shall work out ESHIA rev A-01 based on ESHIA rev. 00 (named “Shtokman Development ESHIA” and issued in March 2010) as part of the Shtokman Gas-Condensate Field (SGCF) Development, Phase 1, Final Investment Decision 1 (FID 1). It shall cover the offshore, onshore and onshore parts of the Shtokman Gas-Condensate Field (SGCF) development, Phase 1, and appropriate facilities of Phases 1, 2 and 3. ESHIA rev. A-01 shall comply with the International standards for HSE, social environment and population health.

1.1 Background of Preparation of ESHIA rev. A-01

The Shtokman Gas Condensate Field is a giant gas field located in the Russian sector of the Barents Sea situated about 900 km north of Arkhangelsk and 550 km from the Kola Peninsula (Teriberka) coastline. The closest land mass is the island of Novaya Zemlya, approximately 275 km east of the field location. The gas field was discovered in 1988, and its hydrocarbon reserves are estimated at 3.7 trillion m3 of gas and more than 31 million tons of condensate. For the purpose of its development the project is divided into offshore and onshore portions.

The original development scheme for phase 1 consisted of drilling subsea wells using 3 templates. Subsea lines, several kilometers long will connect the templates to the floating production unit (FPU). After dehydration on board of the FPU, gas and condensate would be compressed and routed via double trunk pipelines (36”) to receiving facilities in Teriberka. Onshore part of gas is to be treated and exported via pipeline with the second part - liquefied into LNG.

Original onshore design included gas and condensate treatment units and LNG process unit, with associated utilities. The units were fully integrated and designed for processing the 70 MSm3/day hydrocarbon pipeline flow. The LNG plant would have a capacity of 7.5 Mt LNG/year. Condensate was to be separated, stabilized, stored and exported.

Since April 2009 Shtokman Development has contracted ERM to undertake a World Bank/EBRD standard Environmental, Social and Health Impact Assessment (ESHIA) for the original scope described above. This work is now completed and for practical purposes this ESHIA is now called: ESHIA rev 00, Shtokman, phase 1.

At the February 2010 Shtokman Development AG Board Meeting it was decided to develop the Phase 1 integrated project in two stages:
- Stage 1 is the completion of the offshore design, and further working out of the gas and condensate treatment system for export through pipeline from Teriberka to Volkhov.

- Stage 2 is to independently optimize and further design the LNG production unit and associated utilities.

Consequently the Final Investment Decision (FID) is now split into 2 FIDs:

- FID-1 related to Stage 1 (construction of export pipeline and gas treatment unit). FID-1 is planned to be adopted in March 2011 with a first gas export in 2016.

- FID-2 related to Stage 2 (LNG plant including appropriate utilities); it is planned to be adopted at the end of 2011, with LNG export scheduled to commence in 2017.

This change is predominantly a change in timing rather than a change of the principle development of Shtokman Development phase 1.

- The Offshore scheme remains unchanged.

- the Gas treatment unit (GTU) within stage 1 design will be operated as an independent unit (i.e., not connected to any LNG plant utilities), and will be located in an area, not covered by the construction works of Stage 2 LNG facilities.

Stage 1 gas will be exported to Volkhov (between Vyborg/St Petersburg) in a dedicated pipeline to be further transported through the North Stream pipeline. Condensate will be exported from Korabelnaya bay facilities.

The scope of work for ESHIA rev. A-01 is related only to Stage 1 development, GTU, gas production and export, and appropriate facilities.

Stage 2, of the project is currently under revision for reducing the LNG plant footprint, and further optimization of the LNG concept. Stage 2 concept is expected to be approved in June 2010.

Upon approval of Stage 2, SDAG will begin works on individual ESHIA rev. B-01. Technical Assignment of the ESHIA rev. B-01 will be developed upon SDAG Board approval of the Stage 2 concept.

1.2. Definitions

- Associated facilities/projects: supporting/auxiliary facilities, objects and works owned or under the control of parties contracted for the operation of the clients business or for the completion of the project (contractors).

- ESHIA rev. 00: The Shtokman Development ESHIA document issued in March 2010, which covers the offshore and the original onshore projects of Shtokman Development phase 1.
• ESHIA rev A-01: The Shtokman Development ESHIA document to be prepared with reference to the ESHIA rev 00, and which focuses on the FID-1 facilities.

• Customer - SDAG.

• FID-1: Final investment decision-1, which covers the offshore project, offshore and onshore trunkline, onshore Gas treatment Unit (GTU) and its associated support facilities.

• FID-2: Final investment decision-2, which covers the onshore LNG plant and its associated support facilities.

• Contractor: entity to work out ESHIA, rev. A-01.

• GTU: Gas treatment unit. Onshore facilities in Teriberka area that are designed and constructed to receive and treat both condensate and gas from the offshore facilities to assure gas export quality to be exported via pipeline to Volkhov. The tie-in point to the export pipeline is at the fiscal metering facility located in Teriberka.

• ESHIA B-01: The updated part of the original ESHIA rev. 00 related to Stage 2, LNG facilities included in FID-2.

• ESHIA A-01 and ESHIA B-01 are separate but complementary documents, and constitute the whole ESHIA document related to the development of the Phase 1 of Shtokman.

• OVOS - List of actions on environment protection.

1.3. Study boundary

The overall study boundary for the ESHIA rev. A-01 remains the same, as that of the previous ESHIA rev 00 for the offshore part. However, with the recent changes in the FID strategy, the onshore boundary of the study is modified to take into account the new FID strategy, as follows:

Facility boundary:

This scope of work includes the facilities and associated activities related to FID-1.

The facilities and associated activities in FID-1 include drilling activities, Floating Production Unit (FPU), subsea production system, offshore and onshore trunkline ending at the pig receiver/launcher, GTU, and its support facilities, including infrastructure.

1.4. Applicable Legislation

COMPANY shall comply with all applicable regulations and laws of the Russian Federation, International Conventions in which Russian Federation is one of the Contracting Parties, International Guidelines of IFC/World Bank, EBRD, and COMPANY General Specifications.
CONTRACTOR shall be liable to be familiarized with document, all applicable Laws, Regulations and guidelines stipulated in the Scope of Work, notwithstanding the provisions of obtaining regulatory advice from external parties.

This ESHIA shall be worked out in reference to the applicable RF laws and regulations, and the international guidelines of IFC/WB and EBRD.

1.5. Adopted approach to work out ESHIA rev A-01

Taking into consideration the project FID strategy, CONTRACTOR shall comply with the following approach in the preparation of the ESHIA rev A-01:

- This ESHIA rev. A-01 shall address and focus on potential impacts derived from the development and future operations of the Stage 1 facilities, concluded by FID-1. The ESHIA rev. A-01 shall provide a detailed project description of facilities included in FID-1, detailed evaluation of subsequent environmental, health and social impacts in addition to preventative measures. Mitigating and offset measures shall be defined for facilities related to FID-1 during construction, commissioning, operation and decommissioning phases. The ESHIA rev. A-01 shall also provide description on the relevant environmental and social management system, the organization and stipulated resources for implementation of the mitigation measures in all phases of the project (construction, commissioning, operation and decommissioning phases)

- ESHIA – OVOS commitment alignment: CONTRACTOR shall ensure that the ESHIA rev. A-01 and OVOS commitments are aligned.

1.6. Scope of Work for the ESHIA rev. A-01

The ESHIA rev 00 issued on March 31, 2010 shall be used as reference for the preparation of the ESHIA rev. A-01.

1.6.1 General Scope of Work

This scope of work may be considered as an up-date of the previous ESHIA rev. 00. CONTRACTOR shall ensure appropriate transfer of earlier obtained knowledge, data, and information to the text of ESHIA rev. A-01.

CONTRACTOR is responsible of allocating necessary resources and technical expertise to provide a seamless transfer, and to complete the specified scope of works, as described in the schedule to work out ESHIA rev. A-01.

CONTRACTOR shall identify appropriate data, and descriptions within ESHIA rev. 00 to be directly transferred to the ESHIA rev. A-01, consulting COMPANY, if necessary.
It is important to highlight that CONTRACTOR is responsible to ensure that ESHIA rev. A-01 meets the standards of IFC/WB and EBRD, notwithstanding providing technical advice to COMPANY to obtain additional data/information to carry out further works, and which presence is stipulated by the above standards.

1.6.2 SOW - Offshore project

- ESHIA – OVOS commitment alignment.

1.6.3. SOW- GTU

GTU brief description

The onshore facilities layout included in stage 1 of the project development with a common FID-1 are as follows:

- Site preparation activities, including soil dumping areas (exclusively for sites indicated by FID-1)
- Construction, commissioning and operation activities including;
  - Onshore trunk pipeline section
  - Receiving facilities: two phase flow from offshore
  - Gas treatment plant: Full gas flow from offshore: 70 Mm3/d
  - Condensate stabilization: design for gas export phase
  - Condensate storage: Short term storage capacities
  - Condensate pipeline currently planned from Zavalishina to Korabelnaya
  - Condensate offloading facilities currently planned in Korabelnaya bay
- Pig launcher – receiver
- Flare
- Water treatment facilities including water intakes/water sources
- Effluent discharges
- Waste water management facilities, including water intake and water sources
- Systems of waste recycling
- Permanent Camps
- Construction camps
- Power generator unit(s), including primary, auxiliary and emergency units (to be confirmed)
- Material Offloading Facility (temporary)
1.6.4. Onshore SOW

- Environmental and social baseline

The onshore GTU will be located in the Teriberka/Zavalishina bay area. This area has been extensively surveyed. A complete environmental and social baseline was undertaken for ESHIA rev. 00.

- Onshore project description
- Environmental Impacts and mitigation measures
- Social and health impacts
- Onshore Best Available Techniques (BAT) assessment

1.7 Detailed SOW – Common issues

1.7.1 Summary

- Scoping report

As part of the EBRD procedures, it is necessary to inform the residents of Teriberka of the new change through a scoping meeting for the ESHIA rev. A-01 (organization of scoping meeting, premise rent, preparation of presentation materials and etc). A new scoping meeting should be held in Teriberka. The goal of the scoping meeting is to inform and to influence the scope of the ESHIA rev A-01. The results of the scoping meeting and consultation should be captured within the final revised Scoping Report, to be fit for further publication (SDAG web site, Teriberka/Murmansk offices). Tentative date for scoping meeting will be August 2010. Scoping report shall be updated and completed in August 2010.

- Stakeholder Engagement plan (SEP).

SDAG have produced a comprehensive stakeholder engagement plan based on the original scheme. Contractor will have to update the SEP taking into consideration the new design and schedule of the project. The SEP should be ready to be made public and placed on SDAG web site.

- Introduction

Contractor shall update the introduction and executive summaries associated with the ESHIA rev. A-01

- OVOS and ESHIA alignment and verification (Offshore and Onshore):
Alignment of commitments in relation to environmental mitigation measures and other relevant matters.

- Assessment of Best Available Techniques (BAT)
- Master document register
  Establish a master document register and update this on monthly bases.

2. ENGINEERING DELIVERABLES

ENGINEER shall submit to COMPANY ESHIA rev. A-01 with the content as follows:

Volume - 1: Project overview
1. Introduction
2. Russian and International Legislation, Project standards
3. ESHIA approach and Assessment Methodology
4. Public Consultation meetings
Appendixes

Volume - 2: Project Description

5. Project development (including adjacent facilities) and its options.
7. Project description - Trunkline.
8. Project description - Onshore.
9. Assessment of Project Impact Area. The Chapter covers works and facilities marked FID-1
Appendixes

Volume - 3: Environmental and Social baseline

10. Review of Environmental and Social baseline
11. Offshore Environmental baseline
12. Onshore Environmental baseline
13. Characteristics of social and economic state and health of local population
14. Baseline sensitivity
Appendixes
Volume - 4: Impact Assessment & Mitigation Measures

15. Review of Impact assessment and mitigation measures
16. Offshore Impact assessment
17. Onshore Impact assessment
18. Incidents and Accidents
19. Brief description of post-effects including cumulative and cross-border impacts
20. Best available technique assessment
   Appendixes

Volume - 5: Management and execution

21. Plan of actions for environment protection and social sphere
22. Uncertainties and recommendations
23. Alignment and verification between ESHIA and OVOS.
24. Overall Project assessment
   Appendixes