Shtokman – a world class energy project

Shtokman field is one of the largest natural gas fields in the world. Located on the shelf of the Barents Sea almost 600 kilometers from land at a depth of 340 meters, it is unique in terms of scale and complexity of development. No project of this level has ever been undertaken in Russia before.

Development of the Shtokman field will be divided into three phases with an overall production volume of 71.1 billion m³ of gas per year. Phase 1 will be realized by means of subsea production systems and special FPU-type (floating production unit) vessel. The product will be then transported via pipeline to shore at Teriberka Bay (120 km from Murmansk), where a transport and process complex, LNG plant and other production facilities will be located. The Shtokman gas condensate field is set to become the resource base for deliveries of gas both via pipeline and after processing into LNG. Shtokman gas will thus play an important role in fuel supplies to the European and international markets.

Shtokman in figures

- Field discovered in 1988
- Located 900 km north of the polar circle and approximately 600 km from shore
- Among the 10 largest in the world in terms of initial reserves: 3.9 trillion m³ of gas and 56 million tonnes of gas condensate
- Annual production during Phase 1 – 23.7 billion m³
- LNG Plant capacity of 7.5 million tones per year
- Sea depth in the production area 320-340 meters
- Wave height in the production area up to 27 m
- Annual temperature range from -50ºC to +33ºC

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Russian project with world class partners

A special purpose company – Shtokman Development AG – was set up to implement Phase 1 of the Shtokman field development. It is a joint venture by three major world companies: OAO Gazprom (Russia), Total S.A. (France), and Statoil ASA (Norway). This powerful consortium will guarantee the application of front ranking technologies, safety, and effective corporate management.

SDAG is responsible for designing, financing and constructing the infrastructure necessary for the First Phase of the Shtokman development and will own and operate the infrastructure for 25 years from start of commercial production. This includes offshore installations, pipeline to shore and the onshore processing plants both for LNG and piped gas.
Main stages in the Shtokman project

- Agreement on StatoilHydro participation – October 2007
- Founding of Shtokman Development AG – February 2008
- Final investment Decision 1 – March 2011
- Final investment Decision 2 – late 2011
- Start of gas production for pipeline delivery – 2016
- Start of LNG production – 2017

3 The project is technically viable

As an innovative project, the Shtokman GCF incorporates fundamentally new engineering solutions. Many of its facilities are unsurpassed in world practice in terms of engineering complexity, weight, and size.

Offshore part of the project
The basic offshore facilities will include:
- Subsea production system
- System of flowlines and flexible risers to feed the gas condensate wellstream to the production vessel
- Self-propelled floating production unit (FPU) that can be rapidly uncoupled and moved out of the path of icebergs
- Trunk pipeline for LNG production at the onshore facilities and pipeline gas deliveries

Onshore part of the project
The basic onshore facilities will include:
- Product intake facilities
- Treatment plant for export pipeline gas
- LNG plant with capacity of 7.5 million tonnes/year
- LNG storage tanks
- Marine terminal for condensate and LNG export
- Ancillary facilities
- Power station, housing village, support vessels and tugs, heliport, etc.

What is FPU?
Due to the potential hazard of collision with drifting icebergs and the considerable sea depth, it was decided from the outset to build a production platform based on a floating production unit (FPU) type vessel. This type of vessel can be rapidly uncoupled and moved in the event of impending collision with an iceberg, can maneuver in ice, and can halt production, move out of the path of the oncoming ice, then return, hook up again, and continue production. It will be the first time that this technology has ever been used in Russia.
Mindful of the scale and complexity of the Shtokman project, the company has made enhanced commitments to conserve the environment and minimize any potential negative impact on the vulnerable and unique ecosystem of the Barents Sea and its coastal lands.

Two assessments of the impact by the company’s operations were conducted during 2007-2010:

- An environmental impact assessment (OVOS) according to Russian standards
- An environmental, social, and health impact assessment (EShIA) according to international standards

The company regularly holds public hearings and consultations with regional environmental and public organizations. The meetings are attended by major stakeholders of the project, including environmental organizations in Murmansk Oblast and members of the indigenous minorities of the North.

On September 24, Shtokman Development AG and the World Wildlife Fund (WWF) signed an agreement of intent that provides for bilateral consultations, working meetings, and exchange of information on the implementation of environmental protection measures and projects. According to Igor Chesten, Director of WWF-Russia, it was the first time that this sort of agreement had ever been signed in Russia at such an early stage of project implementation.

«FROM THE OUTSET, THE COMPANY HAS MADE ENHANCED COMMITMENTS TO PROTECT THE VULNERABLE ARCTIC ENVIRONMENT»

One of the important goals for Shtokman Development AG is to bring about the creation of Russia’s own scientific, production, and personnel capabilities for operating on the Arctic shelf. This intent is recorded in the shareholder framework agreements. These stipulate that in the selection of contractors preference will be given, all other things being equal, to Russian companies.

Participation by Russian contractors is currently one of the mandatory criteria for evaluating bids, and wherever possible the statements of work are formulated so as to enable Russian companies to take part in the bidding.

Project participation by Russian companies at the Phase 1 implementation stage should become the launching pad for their participation in subsequent phases.
Shtokman Development AG considers its social responsibility to lie primarily in becoming a solid and conscientious taxpayer. The start of this process was laid with the registration in Murmansk and Teriberka branches of Shtokman Development AG. The Company arranged for social studies to be conducted in the planned operations area, and these became the basis for the ESHIA social section. Shtokman Development AG has also drawn up a plan and program of sustained social development, a plan for working with the indigenous minorities of the North, a plan for working with stakeholders, a procedure for dealing with complaints and suggestions, and other documents aimed at developing the social sphere and meeting the requirements of corporate social responsibility during project implementation. The chief work focus is on four main areas: assistance for the indigenous minorities of the North and preservation of their ethnic values; promotion of sport and healthy lifestyles; support for educational programs; and environmental protection.

Strategic importance of the project:

- Opening of a new era in industrial development of the Arctic shelf
- Synergy of innovative technologies – a step forward in development of the country’s economy
- Transfer to Russia of state-of-the-art techniques of management and the design and production of industrial products for developing offshore hydrocarbon fields
- Providing work for Russian industry at a time of global economic crisis
- Creation of a new, long-term resource base
- Diversification of export products (LNG) and routes for exporting hydrocarbon products to global markets

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