



**Arctic development — a task more important than space exploration.  
Such was the motto of the international forum on the development  
of Arctic and its shelf held in St. Petersburg — RAO/CIS Offshore 2017.**

**13<sup>th</sup> RAO/CIS Offshore 2017 International Conference and Exhibition for Oil and Gas  
Resources Development of the Russian Arctic and CIS Continental Shelf was held in  
Saint Petersburg on September 12-15, 2017.**

Originally organized in Saint Petersburg in 1993 upon the initiative of Gazprom and Rosshelf the conference is held in September of odd-numbered years gathering a wide range of Russian and foreign representatives of government entities, business, scientific and production companies. As was mentioned by E.P. Velikhov, academic of the Russian Academy of Sciences, the key issues of the first Conference concerned the organization of domestic production of equipment for the oil&gas projects on the Russian Arctic shelf. This is still important nowadays.

In 24 years that have passed since the first conference significant changes in terms of the Russian Federation continental shelf development have been made. Gazprom, Rosneft Oil Company and Lukoil Russian oil and gas companies started oil production at the offshore fields in the Sea of Okhotsk, Pechora Sea, Baltic Sea and Caspian Sea. The scope of exploration activities in the Arctic seas shelf regions has considerably increased, Prirazlomnaya offshore ice-resistant fixed platform in the Pechora sea was commissioned and oil production at the Prirazlomnoye oil field has been started, for the first time in Russia Kirinskoye field in the Sea of Okhotsk was commissioned using underwater production units, the northernmost prospect well was drilled and Pobeda large oil&gas field was discovered at the Vostochno-Prinovozemelskiy-1 license block on the continental shelf of the Kara Sea. Nowadays the oil produced at the Prirazlomnoye field in the Pechora Sea and onshore Pechora oil&gas province fields is transported by sea along the western part of the Northern Sea Route. Large-scale exploration activities on the Arctic Seas shelf and discovery of new offshore fields have set a range of new tasks for oil&gas, engineering and ship-building industries to produce unique machinery for the offshore fields development in the extreme environmental conditions of the Russian Arctic's freezing seas.

RAO/CIS Offshore has become the Russia's main site for cross-lighting of current issues and making specific decisions in the field of domestic offshore oil&gas production and Arctic continental shelf development.

Since 2013 the International Conference and Exhibition has been held according to the Russian Federation Government Executive Order No. 989-P dated June 15, 2013.

In 2017 RAO/CIS Offshore was attended by over 300 Russian and foreign companies including Gazprom, Rosneft Oil Company, Lukoil, Gazprom Neft, Sevmash, Gazprom Flot, Gazprom neft Sakhalin, Kurchatov Institute, A.P. Karpinsky Russian Geological Research Institute (VSEGEI), Oceanpribor Concern, Afrikantov OKBM, NIKIET JSC, Krylov State Research Centre, Far Eastern Shipbuilding and Shiprepair Center, Aker Solutions, DNV GL, General Electric Oil&Gas, KBR, Kvaerner, Siemens, TechnipFMC and others.

Special greetings to the International conference delegates were sent by the Deputy Prime Minister of the Russian Federation Arkady Dvorkovich and the Governor of Saint Petersburg Georgy Poltavchenko.

RAO\CIS Offshore 2017 started with the "Shelf Projects Implementation as a Driver for Industrial and Economic Development" plenary session held at the Smolny's events hall.

Reports at the plenary session were presented by:

*Kirill MOLODTSOV*, Deputy Minister of Energy of the Russian Federation;

*Evgeny KISELEV*, Deputy Minister of Natural Resources and Environment of the Russian Federation – Head of the Federal Agency for Mineral Resources;

*Alexey KONTOROVICH*, Academic of the RAS, Chairman of the Research Council of the Russian Academy of Sciences for Geology, Oil & Gas and Coal Resources Development;

*Valery GOLUBEV*, Deputy Chairman of the Management Committee, PJSC Gazprom;

*Andrey SHISHKIN*, Vice-President for Energy, Localization and Innovation, PJSC NK Rosneft;

*Andrey PATRUSHEV*, Deputy General Director, Gazprom Neft

*Ilya MANDRIK*, Vice-President, Lukoil;

*Nils Andreas MASVIE*, Vice-President, DNV GL AS;

*Evgeny ZAGORODNY*, Vice-President for Civil Shipbuilding, United Shipbuilding Corporation;

*Sissel ERIKSEN*, Director for Exploration, Norwegian Petroleum Directorate.

Konstantin Simonov, General director, National Energy Security Fund, acted as the moderator of the Plenary session.

The International Conference Plenary session participants expressed their opinion that taking into account the complex of actual problems and the extent of their recognition the Arctic development is currently a task more difficult than the space exploration.

The Plenary session was concluded by the International contest of scientific, scientific and technological and innovative projects for the development of Arctic and continental shelf 2017 awards ceremony.

The RAO/CIS Offshore 2017 included ten conference sessions to discuss the issues concerning the determination and development of the Russia's continental shelf resource potential, global energy projects implementation in the Arctic, production of advanced equipment at the Russian enterprises, equipment for marine oil&gas industry, environmental and industrial safety, development of legal framework and international cooperation. Over 220 reports were presented at the Conference.

Issues related to the resource potential in Arctic and on continental shelf, international projects implementation to study the Eurasia's Arctic, Far Eastern and landlocked seas shelf geological structure were discussed during two sessions one of which was held at the A.P. Karpinsky Russian Geological Research Institute (VSEGEI). U.S. Geological Survey and Norwegian Petroleum Directorate representatives, international projects participants from Germany, Korean Republic, Iran, Kazakhstan, Azerbaijan took part in the business meetings. The parties expressed their mutual interest in the preparation of scientific and technological agreements to exchange new technologies and methods for the search and evaluation of mineral deposits as well as exchange of seismic and bathymetric data on the border-line water areas. The Protocol on continuation of international cooperation between the Federal Agency for Mineral Resources and Norwegian Petroleum Directorate was signed in the framework of the sessions.

Continental shelf and Arctic development is a key geopolitical and technological challenge for the Russia's industry and oil&gas complex.

Participants of the round-tables concerning the marine oil&gas fields facilities construction, machinery and technology for their development in the arctic area, use of underwater and under the ice equipment for the mineral resources production in the freezing seas conditions emphasized the significant progress in the study of the Russian Arctic ice and hydrometeorological conditions achieved by the Russian scientific institutions and fuel and

energy complex companies: Rosneft Oil Company, Arctic and Antarctic Research Institute, Gazprom VNIIGAZ and others.

Special attention was paid to the current issues of underwater and under the ice technologies development including:

- arrangement of an underwater complex for the transportation, installation and maintenance of various purpose underwater equipment;
- creation of a set of technologies and equipment for the wells construction using robotized underwater drilling facilities;
- creation of underwater robotized complex for the hydrocarbons seismic exploration under the ice;
- IEPCI advantages for the offshore fields development;
- drilling season enhancement concept in the Arctic shelf ice conditions and the technical and economic efficiency of the oil&gas fields development.
- creation of Russian robotized technical equipment to carry out underwater engineering operations at the offshore fields in the short navigation season conditions and severe ice situation.

RAO/CIS Offshore 2017 participants noticed that the Arctic shelf development is impossible without the use of higher-level ice rate special-purpose vessels, while Russian shipbuilding industry has gathered significant experience in the construction of such vessels. Russian enterprises are historically at a high level in the ice-breakers market segment.

The importance of ice-breaking fleet enhancement to ensure the Northern Sea Route operation, which is of special interest to the LNG transporting companies due to significant reduction of time required for the traveling between the ports of Asia and Europe, was emphasized in the participants' speeches. Concerning the creation of extensive shipbuilding capabilities in the Russia's Far East region the participants noticed the dual-fuel gas-propelled vessel innovative project implementation prospects, and discussed the issues of arctic tank vessel creation with nuclear propulsion system.

Environmental safety provision during the arctic area and continental shelf hydrocarbon resources development was discussed in close connection with the issues of government control and supervision of the offshore oil&gas facilities industrial safety.

The participants recognized the necessity of federal level improvement of aerospace search and rescue system in terms of time reduction emergency response on sea and in the arctic area in particular. Aviation search and rescue means stationing importance in the areas maximum close to the offshore hydrocarbons production areas was emphasized as well as the importance of marine-purpose helicopters creation including those of search and rescue design.

The "Regulatory environment of the Russian Federation and CIS oil&gas resources development" round-table participants mentioned that currently measures are taken aiming at the contractors market enhancement for the hydrocarbons resources development in the Russian Federation's Arctic area, including the implementation of state target programs, import replacement strategy under sanctions, as well as legislative initiatives. At the same time it is obvious that the forming of the competitive Russian contractors market requires a lot of time.

At this stage, the foreign contractors play a significant role in the shelf projects implementation, but the current regulatory environment in the field of the Russian Federation continental shelf development restricts their opportunities for licenses obtaining, which may lead to risks during exploration works and other license obligations fulfillment. Thereupon, the round-table participants emphasized the necessity of the current legislation and law enforcement practice harmonization in order to reduce the said risks.

Among the primary fields requiring further improvement the following can be listed: licensing of the facilities and structures operation on the continental shelf (including drilling units), as well as licensing of marine transportation using special-purpose vessels for the needs of the shelf projects.

Russia-Norway session on the issues of the Arctic continental shelf oil and gas resources development was held for the first time during RAO/CIS Offshore 2017. Russian and Norwegian companies representatives mentioned in their reports that the creation of highly reliable underwater/under the ice equipment and technologies is required for the Arctic shelf conditions. The currently available underwater technologies and operation principles can not be used to the full extent on the Arctic shelf as the ice cover restricts or even eliminates the operational access for the petroleum-gas field underwater equipment maintenance and repair. Special attention was paid to the underwater equipment serviceability, response to possible oil products spills, ice expeditions organization.

During the discussions the issues of offshore wells construction taking into account the shallow gas deposited in the permanent frost layers were mentioned as currently important.

RAO/CIS Offshore 2017 concluded with a Youth Forum where the students and post-graduates of the industry specific institutes and universities discussed their works and professional skills improvement possibilities with the leading industry professionals.

Taking into account the specific importance of the Arctic development and the high profile of the RAO/CIS Offshore International Conference and Exhibition achieved during its 25-years history the Event participants recommendations are as follows:

1. To invite on a large scale the organizations capable of special-purpose equipment development for the mineral resources extraction in the Arctic shelf underwater/under the ice conditions to take part in the RAO/CIS Offshore;
2. Oil&gas companies shall consider the possibility to include the projects aimed at the development and use of advanced technical means for the underwater drilling, seismic exploration, transportation, underwater/under the ice equipment installation and maintenance to their innovative development program;
3. It is reasonable to continue the works of the Ministry of Industry and Trade of Russia, Ministry of Economic Development of Russia and Gazprom aimed to create robotized means for the underwater/under the ice drilling and seismic exploration.
4. Apply efforts to optimize the state regulation and the supervisory bodies authority in the field of offshore projects.
5. To inform service companies more actively and in detail on the vital needs of the oil&gas companies.
6. To the Russian companies: Gazprom, Rosneft Oil Company, Gazprom Neft, NOVATEK, LUKOIL, Zarubezhneft, United Shipbuilding Corporation, Rosatom Group of Companies and Kurchatov Institute shall contribute to the organization of the following RAO/CIS Offshore events and take active part in its business program.
7. Ministry of Energy of Russia, Ministry of Transportation of Russia, Ministry of Industry and Trade of Russia, Ministry of National Resources and Environment of Russia shall participate in the RAO/CIS Offshore and contribute to its organization and business program development.
8. Ministry of Economic Development of Russia shall inform Russian and foreign trade missions on the RAO/CIS Offshore holding and contribute to the invitation of foreign participants.

9. The Government of Saint Petersburg shall continue its active participation in the RAO/CIS Offshore organization and its business program and exhibition display development.

10. To organize exhibition and conference in October 2018 in the framework of a partner project – Offshore Marintec Russia:

- Youth Forum under supervision of Gazprom VNIIGAZ;
- Joint workshop of Gazprom, United Shipbuilding Corporation and Norwegian oil&gas and service companies;
- RAO/CIS Offshore session at the A.P. Karpinsky Russian Geological Research Institute (VSEGEI) - International cooperation for the Arctic and continental shelf hydrocarbons resources development – forecasting, exploration, related infrastructure.

11. Ministry of Energy of Russia shall continue to conduct contests and award their winners - multidisciplinary teams representing a wide range of organizations and enterprises working in the field of sea equipment and technologies.

12. Extensive effort and high level of work of the Organizing, Program and Executive committees and Secretariat for the RAO/CIS Offshore 2017 organization and holding.

This International conference has no analogues among Russian oil&gas events and is an analogue of regular shelf conferences in the USA (Houston), England (Aberdeen) and Norway (Stavanger) as per the wide range of the Russian Federation continental shelf hydrocarbons resources development scientific and technical practical issues.

The works of RAO/CIS Offshore for many years have been the reference books for the professionals in research, design, construction and operation of offshore oil&gas fields, as well as for students, post-graduates and lecturers of the corresponding educational institutions as all the latest global scientific and technological achievements in the field of the continental shelf hydrocarbons offshore fields are gathered in them.

To recommend that the Committees and the Secretariat shall continue work for the RAO/CIS Offshore 2019 organization and holding with the existing set members.

13. The scheduled RAO/CIS Offshore Conference and Exhibition shall be held in Saint Petersburg in September 2019.

**Co-chairman, Organizing Committee  
Academic of the RAS**

**Co-chairman, Program Committee  
Academic of the RAS**

**Evgeny Velikhov**

**Alexey Kontorovich**

**Co-chairman, Program Committee, Deputy  
Minister of Energy of the Russian Federation**

**Kirill Molodtsov**