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# **EXPLORATION**

As part of maintaining sufficient resource base to support growth in line with the Development Strategy until 2031, the Company plans exploration at seven offshore and seven onshore projects, as well as further exploration at the key existing fields. The exploration is expected to increase the Company's recoverable reserves (ABC1) by 253 mln tonnes by 2031. The Company plans to achieve a reserve replacement ratio of 105% through organic growth.

# **EXPLORATION HIGHLIGHTS IN 2024**

In 2024, KMG carried on with strategic exploration initiatives to ensure a sufficient resource base for the sustainable growth of its business. Key achievements include:

#### 1. Drilling exploration and appraisal wells

- Turgai Palaeozoic (PZ-1). In late May, KMG started to drill a 5,500-m deep exploration well. Drilling and testing are slated for completion in 2025.
- Abay. In September 2024, the Company and Eni Isatay finished drilling a 2,355-m deep exploration well.
- **Karaton Subsalt (SG-8).** In late November, Karaton Operating and Tatneft started to drill a 5,500-m deep exploration well. Drilling and testing are slated for completion in 2025.
- Bekturly Vostochny (BV-2). In 2024, the Company and Kokel Munay finished drilling and testing of a 3,068-m deep appraisal well. The project identified prospective areas and produced oil flows.
   Production testing documents are currently drafted.
- Karazhar. In 2024, the Company won exploration and production contracts, and in December 2024 it started to drill a 3,000-m deep prospecting well. Drilling and testing are slated for completion
- Taisoigan-1 and Taisoigan-2 (ST-1, OT-3, OT-2).
  In December, the Company started to drill prospecting wells. At the first stage of exploration, KMG will drill eight independent prospecting wells with depth ranging from 400 to 3,800 m. Drilling is slated for completion before the end of 2025.

#### 2. New contracts and licence blocks

- KMG Barlau and Sinopec signed an agreement for the rights to use Berezovsky geological data worth KZT 543.4 mln. Work is in progress under licences obtained in 2022.
- Agreements are signed to initiate partnership with CNOOC in the Zhylyoi project (Kazakhstan's part

- of the Caspian Sea). In 2025, the Company plans to obtain an exploration and production contract and start to prepare for exploration. Financing for the project at the exploration stage will follow a carry arrangement, under which the partner assumes the risks of the initial phases, primarily exploration
- In 2025, the Company plans to obtain an exploration and production contract for Berezovsky, West Kazakhstan Region, and start to prepare for exploration. The partner will provide carry financing for the exploration stage.
- Agreements for the Mugodzhary project (Aktobe Region) are signed with Shell and Chevron to provide a fee-based access to geological and geophysical data gained following a 2D seismic survey for KZT 12 bln. In 2025, the Company plans to finalise the joint study of the project, obtain commercial proposals from Shell and Chevron, and win a joint exploration and production contract. The partner will provide carry financing for the exploration stage.
- KMG's Investment Committee approved obtaining a subsoil exploration licence for Bereke, Northern Shu-Sarysu, and Shygys blocks to conduct pro-active 2D and 3D seismic surveying, identify prospective areas, and obtain relevant exploration and production contracts. KMG Barlau (KMG's 100% subsidiary) will perform the works in 2025–2027.

## 3. Seismic surveying

2D and 3D seismic surveys of about 2,669 and 613 linear km are completed at Mugodzhary and Bolashak, respectively. The data is being processed.

## 4. Strategic partnerships

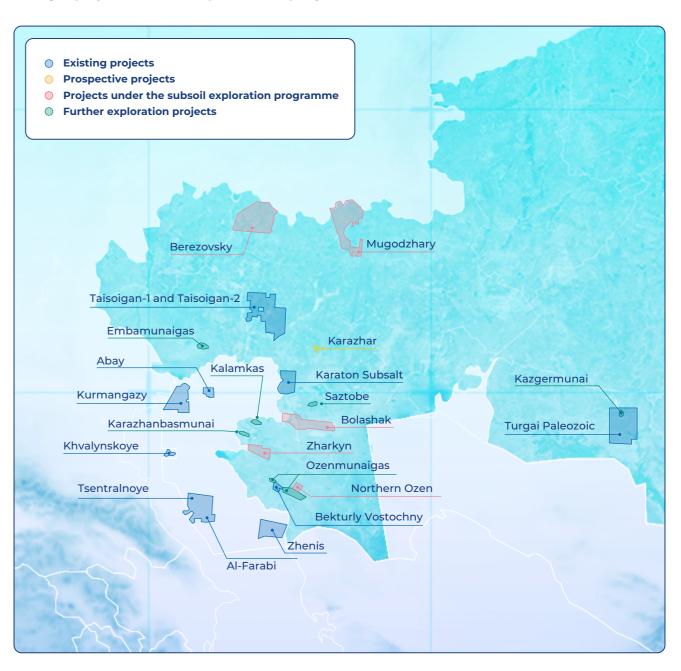
 A strategic partner is selected for Bolashak, while for Berezovsky and Mugodzhary negotiations are ongoing with potential partners, including Shell, Chevron, LUKOIL, and Sinopec.

## Investments in exploration

In 2024, total investments in exploration stood at USD 148 mln, including USD 62 mln coming from KMG. The funds will be used to finance priority projects, including well drilling, seismic survey, and preparation for new projects.

USD 62 million share of KMG investments in total exploration investments in 2024

## Geography of KMG's exploration projects



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# EXPLORATION PROJECTS



#### Kalamkas-Sea-Khazar project

The Kalamkas-Sea–Khazar project is a strategic initiative to develop offshore hydrocarbon fields in Kazakhstan's part of the Caspian Sea. It comprises three key fields – Kalamkas-Sea, Khazar, and Auezov.

The main participants are KMG (Kazakhstan), and LUKOIL (Russia), and the operator is Kalamkas-Khazar Operating.

Kalamkas-Sea is located in the centre of the North-East part of the Caspian Sea at a depth of 6–7 m. Productive are Middle Jurassic horizons. Khazar is located in Kazakhstan's part of the Caspian Sea within the Mangistau Region. It was discovered in 2007 when a mini-DST helped produce oil flow while drilling from the Khazar-1 well. Later, the Company conducted a 3D seismic survey at Khazar to update geological data, determine the geometry of the pay zone, and perform sedimentary basin analysis to study sand bodies. The field's Middle and Lower Jurassic formations present an oil and gas bearing potential.

Production is scheduled for 2029–2030 (first batch). The expected annual peak production will be 4 mln tonnes of oil (around 80 thous. bbl per day). The project will require more than USD 6 bln of investments, including infrastructure building, well drilling, installation of offshore platforms, and environmental measures.

#### **Exploration highlights in 2024**

In 2024, exploration, pre-drilling, engineering, survey, and infrastructure preparations delivered good results. The reprocessing and reinterpretation of 3D seismic data for Kalamkas-Sea are finished, and the Definition phase, contracting and tendering preparations along with various workshops are completed.

The FEED stage was key in 2024. On 10 October, Kalamkas-Khazar Operating signed an agreement with LUKOIL-Engineering's affiliate FES and KMG Engineering to perform FEED.

## Plans for 2025-2030

In 4Q 2025, the Company plans to finish drafting a document package to make a FEED investment decision and launch tenders for platform construction. The final investment decision (FID) is expected to be made in 2025, to be followed by the start of project implementation and construction of offshore platforms in 2026. Commercial production is to start in 2029, with 2030 set as the planned year. These stages will be key for the project to reach targets.

## **Economic and social significance**

The project has a great economic and social value as it will expand the export potential and increase revenue streams to the federal budget, while also creating new jobs and developing local infrastructure. The project will leverage cutting-edge engineering solutions, such as the construction of offshore platforms at Kazakhstan shipyards.



## Turgai Palaeozoic project

This is a strategic initiative to explore and produce hydrocarbons in the Syr Darya District of the Kyzylorda Region. The project funding is fully provided by KMG.

#### Geological profile and potential

Turgai Palaeozoic offers abundant recoverable resources estimated at 23.1 mln tonnes of oil. Prospective formations mainly lie at a depth of up to 5,500 m. The project seeks to study the geology and potential of local hydrocarbon deposits.

#### Preparations (2023-2024)

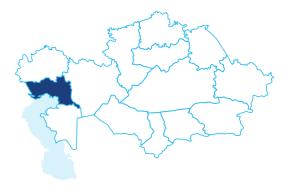
In 2023–2024, the Company conducted large-scale preparations prior to drilling a PZ-1 prospecting well. The steps included detailed exploration, drafting design documents, and procuring deep-hole drilling equipment.

## **Current status (January 2025)**

In late May 2024, the Company started to drill a PZ-1 prospecting well with a design depth of 5,500 m. As of 1 January 2025, 4,985 m were drilled. Drilling continues as planned.

#### Plans for 2025

In 2025, the Company plans to finish drilling the PZ-1 prospecting well and test it for productivity with a view to updating reserve estimates and make further development decisions.



#### **Karaton Subsalt project**

This is a joint project of KMG and Tatneft to prospect for and explore green hydrocarbon fields at Karaton Subsalt located in the Atyrau and Mangistau regions on the border with Tengiz.

#### **Contract and partners**

Karaton Operating is the subsoil user according to the exploration and production contract signed in 2023. The contract is effective for 43 years, including 18 years of exploration and 25 years of production. Partners are KMG (50%) and Tatneft (50%). Tatneft provides up to USD 160 mln in carry financing for the project.

## Geological profile and potential

KMG estimates recoverable resources at 133 mln tonnes of oil (1,047 mln bbl). Prospective formations mainly lie at a depth of up to 5,500 m. The Company will drill a minimum of one prospecting well.

Karaton Subsalt is adjacent to Tengiz which makes it strategically important for exploration and further oil production. However due to its complex geology, the block requires cutting-edge drilling and exploration solutions to be applied.

## **Current status (January 2025)**

On 23 November 2024, the Company started to drill an SG-8 prospecting well with a design depth of 5,500 m. The first stage of drilling 2,410 m is now completed. The Company is currently mobilising drilling equipment, preparing infrastructure, and procuring the required materials.

#### Plans for 2025

In March 2025, KMG will embark on the second stage of drilling the SG-8 well, including continued drilling, geophysical surveys, and core sample testing. Exploration will be ongoing to update the profiles of productive horizons.

#### Prospects

In case of successful exploration the project is set to become an important pillar of Kazakhstan's oil production infrastructure. Potential annual production may reach 5 mln tonnes of oil at peak development. 58 / 59 KMG Annual Report 2024 Strategic report Corporate governance Financial statements Appendix



### **Subsoil exploration project**

This is a strategic initiative to explore Kazakhstan's prospective hydrocarbon resources. The project is designed to evaluate potential oil and gas reserves allowing for further investment decision-making in subsoil use.

#### Licences and blocks

In 2022, the Geology Committee of Kazakhstan's Ministry of Ecology, Geology and Natural Resources issued three-year licences to perform pro-active seismic surveying at five blocks – Berezovsky, Bolashak, Northern Ozen, Zharkyn, and Mugodzhary.

Zharkyn, Bolashak, and Northern Ozen are located in the Mangistau Region, with the western Bolashak jutting out into the Caspian Sea. Mugodzhary and Berezovsky are located in the Aktobe and West Kazakhstan regions, respectively.

## Owner and financing

KMG Barlau, KMG's 100% subsidiary, is the licence owner. KMG provides full financing for the project by increasing KMG Barlau's authorised capital.

#### **Progress**

At Northern Ozen, KMG Barlau performed a 3D seismic survey of 401 km² followed by data processing and interpretation.

Zharkyn, Berezovsky, Mugodzhary, and Bolashak saw 2D seismic of 4,875 linear km in total.

Processing and interpretation of seismic data for Zharkyn, Berezovsky, and Northern Ozen are completed. For Bolashak, historical data for 1,600 linear km are reprocessed and reinterpreted.

#### **Current status**

At present, the Company is processing and interpreting 2D field seismic data for Mugodzhary and Bolashak, to be completed in 2Q 2025.

The Company obtained subsoil exploration licences (project 2.0) for three new blocks – Bereke, Shygys, and Southern Shu-Sarysu. Financed through returns on investment in subsoil exploration 1.0, this project will serve to expand KMG's exploration programme.



## Al-Farabi project

- · Operator: Al-Farabi Operating LLP.
- Project participants: KMG (50.01%) and LUKOIL
- A hydrocarbon exploration and production contract for the Al-Farabi subsoil area in Kazakhstan's part of the Caspian Sea.
- · Project financing: carry financing from LUKOIL.

#### Current statu

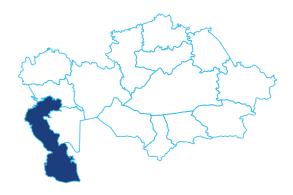
- The reprocessing and reinterpretation of 2D seismic data for 4,000 linear km (Stage 2) are completed.
- Public hearings for a 3D seismic project for 550 km<sup>2</sup> are held.
- An exploration project and Addendum 1 are approved.
- The Company completed modelling for the Middle Caspian using data for the Tsentralnoye field and a new V-1 well at Zhenis.
- An addendum to the 3D seismic project is being drafted to reduce the volume and change timelines.



## **Bekturly Vostochny project**

- · Operator: Becturly Energy Operating.
- Project participants: KMG (50%) and Kokel Munay (50%)
- Project financing: Kokel Munay covers 100% of project costs. Hydrocarbon evaluation is completed, addenda to the production testing project are being drafted.

100 % of expenses covered by kokel Munai



## Khvalynskoye project

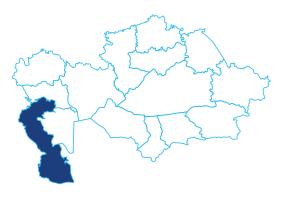
- The project relies on the agreement between Kazakhstan and Russia on delimiting the bottom of the northern Caspian Sea to exercise sovereign subsoil use rights.
- The operator is Caspian Oil and Gas Company, a 50/50 joint venture of KMG and LUKOIL (Russia).
- Project financing: on a parity basis.
- Recoverable hydrocarbon reserves (geological/ recoverable): 250.5 bln m³ of gas, 46.4 mln tonnes of oil, and 7.8 mln tonnes of gas condensate.

#### **Current status**

- A production sharing agreement is at the stage of drafting.
- Due to Gazprom having gas export monopoly according to Russian laws, negotiations are underway with the company on gas selling terms and obtaining a 25% interest in the project.
- In 2021, an addendum to the development scheme was drafted and reserves were estimated.
- At present, Caspian Oil and Gas Company is preparing pre-FEED inputs.



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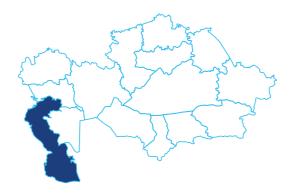


### Tsentralnaya project

- The project relies on the agreement between Kazakhstan and Russia on delimiting the bottom of the northern Caspian Sea to exercise sovereign subsoil use rights.
- Operator: Tsentralnaya Oil and Gas Company (KMG – 50%; TsentrCaspneftegaz, a 50/50 joint venture of LUKOIL and Gazprom (Russia) – 50%).
- A hydrocarbon exploration and production licence within the boundaries of Tsentralnaya in place.
- Project financing: loans to TsentrCaspneftegaz for Tsentralnaya Oil and Gas Company
- Recoverable reserves: 90.9 mln tonnes of oil, 41.7 bln m<sup>3</sup> of gas, and 2.5 mln tonnes of gas condensate.

#### Current status

- In 2021, the project saw a feasibility study prepared which resulted in negative economic viability for all development options. That said, the participants decided to minimise Tsentralnaya Oil and Gas Company's operations and are looking for options to streamline the project.
- In 2022, an exploration licence was extended, with an appraisal well to be drilled before 2031.
- Appraisal is to be completed in 2034.



## **Kurmangazy project**

- The project relies on the agreement between Kazakhstan and Russia on delimiting the bottom of the northern Caspian Sea to exercise sovereign subsoil use rights.
- A production sharing agreement for Kurmangazy was signed on 6 July 2005.
- Subsoil users are KMG (50%) and RN-Exploration (50%).
- Financing is provided on a 50/50 basis.
- · The project operator is Kurmangazy Petroleum.
- On 11 April 2024, KMG and Kazakhstan's Ministry of Energy signed Addendum 3 to the production sharing agreement which transferred subsoil rights of MNC KazMunayTeniz to KMG.
- At present, the parties are negotiating with government authorities to agree upon economic terms of the production sharing agreement and draft Addendum 4 providing for extended exploration and subsoil area expansion.

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# International cooperation in exploration

In 2024, KMG strengthened international ties by entering into strategic agreements and running joint projects with global leaders.

1. Cooperation with CNOOC



In August 2024, in Beijing, KMG and CNOOC signed an agreement of intent providing for the joint exploration and evaluation of blocks. In October 2024, KMG and CNOOC signed an agreement to define key partnership terms for Zhylyoi, a new subsoil project.

2. Cooperation with LUKOIL



In July 2024, Askhat Khassenov, Chairman of KMG's Management Board, held meetings with LUKOIL management in Moscow to discuss the expansion of Tengiz and Karachaganak and the Kalamkas-Sea–Khazar project. A special attention was paid to building an offshore platform at Kazakhstan shipyards.

3. Cooperation with MOL Group



In 2024, production at the Rozhkovskoye field (Ural Oil and Gas) developed by KMG in partnership with MOL Group amounted to 301 mln m³ of gas and 222 thous. tonnes of condensate. The companies are working to fast track project development under Phase 2 and increase annual production to 700 mln m³ of gas.

4. Cooperation with Sinopec



In November 2024, the Company held a competition for a strategic partner at Berezovsky, with Sinopec passing the pre-qualification stage. The parties are finalising corporate procedures to set up partnership, obtain a joint exploration and production contract for Berezovsky in 2025, and start exploration. The strategic partner will provide carry financing at the exploration stage.

5. Cooperation with Shell and Chevron



In 2024, following a global roadshow to raise capital for exploration projects, the Company signed an agreement on joint exploration with Shell and Chevron to study geological and geophysical data for KMG's prospective projects. As a result, the parties selected Mugodzhary for potential partnership in subsoil use. Earlier KMG conducted a 2D seismic survey in the area as part of subsoil exploration. Shell and Chevron signed a contract to obtain seismic data to perform their own geological and technical evaluation. In 2025, the Company expects to receive a commercial proposal indicating the companies' interest in partnership with KMG.

In November 2024, the Company held a competition for a strategic partner at Mugodzhary, with Shell and Chevron passing the pre-qualification stage. In case a joint subsoil use contract is signed, the strategic partner will provide carry financing at the exploration stage.

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## Improved model contract

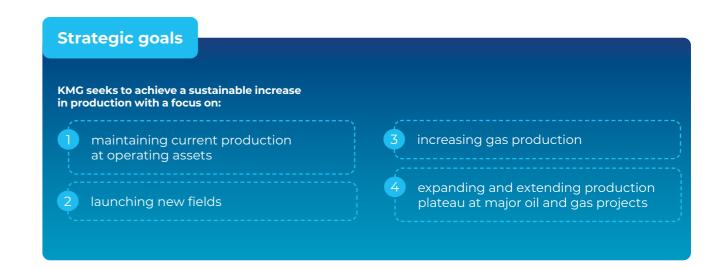
In 2023, to improve competitiveness and attract investment in geological exploration of complex projects, the Company introduced an improved model contract providing for fiscal and regulatory benefits. These measures seek to increase the profitability of exploration at fields with high geological risks, including:

- subsalt deposits with a salt thickness of over 100 m;
- non-structural traps and deep deposits (below 4,500 m);
- deposits with high hydrogen sulphide concentration (more than 3.5%) and abnormally high reservoir pressures;
- offshore projects in Kazakhstan's part of the Caspian Sea and the Aral Sea;
- gas fields with a minimum share of oil saturated part of reservoirs (less than 0.25%).

Thanks to the improved model contract, KMG signed profitable agreements for Kalamkas-Sea, Khazar, Auezov, Karaton Subsalt, Karazhar, Taisoigan, and East Urikhtau, which unlocked opportunities for further exploration and development of complex projects.



## **OIL AND GAS PRODUCTION**



## Oil and gas condensate production

Oil and gas are produced by KMG's operating assets and major domestic projects (megaprojects) where KMG has non-operating interests.

The Company is well integrated into the global oil and gas ecosystem and cooperates with recognised global leaders, which enables us to introduce best practices, cutting-edge solutions and high standards to support the industry's sustainable growth.

In 2024, oil and gas condensate production went up 1.3% to 23,837 thous. tonnes (490 thous. bbl per day):

- Ozenmunaigas grew its oil and gas production by 4.5% to 5,098 thous. tonnes and by 2.7% to 612 mln m³, respectively. At Embamunaigas, oil production went up 2.5% to 2,790 thous. tonnes, while gas output shrank by 5.5% to 205 mln m³. Mangistaumunaigaz increased its oil and gas production by 0.3% to 3,085 thous. tonnes and by 3.7% to 443 mln m³, respectively. An increase in production at these assets is due to fewer power outages by Mangistau Nuclear Power Plant year-on-year and additional well interventions to boost output.
- Other assets increased production by 15.1% to 3,321 thous. tonnes mainly as a result of robust volumes at Dunga acquired in late 2023, and the launch of Rozhkovskoye (Ural Oil and Gas) in December 2023 along with new wells at Urikhtau. At the same time, production at mature Kumkol fields (Kazgermunai, PetroKazakhstan Inc.) continued to decline due to the natural depletion of reserves.
- At Tengiz, oil production attributable to KMG went down 3.7% to 5,562 thous. tonnes (121 thous. bbl per day) largely on the back of plant overhauls.
- At Kashagan, oil production attributable to KMG also declined by 7.2% to 2,885 thous. tonnes (62 thous. bbl per day) due to the scheduled overhaul

of a slag catcher in October 2024. At Karachaganak, oil and gas condensate production attributable to KMG went up by 1.0% to 1,097 thous. tonnes (24 thous. bbl per day) driven by the growth in raw gas reinjection.

#### **Production assets**

| Operating assets  | KMG's share, % |
|---|----------------|
| Ozenmunaigas, Embamunaigas,<br>Kazakhturkmunay, Urikhtau<br>Operating                         | 100            |
| Dunga   | 60             |
| Mangistaumunaigaz,<br>Karazhanbasmunai,<br>Kazgermunai, Kazakhoil Aktobe,<br>Ural Oil and Gas | 50             |
| PetroKazakhstan Inc.  | 33             |

| Non-operating assets (megaprojects) | KMG's share, % |
|-------------------------------------|----------------|
| Tengiz                              | 20             |
| Kashagan                            | 16.88          |
| Karachaganak                        | 10             |