



# KAZAKHSTAN'S OIL AND GAS INDUSTRY REVIEW

August 2022





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# Main conclusions



In terms of proved oil reserves, Kazakhstan’s ranks 12th place in the world - 3.9 billion tons, and in natural gas reserves it ranks 14th - 2.7 trillion cub. m.



In 2021, oil production amounted to 85.9 million tons (the share of domestic consumption – 23%), and gas production – 54.2 billion cub. m. (61%). Oil production is expected to amount to about 87 million tons in 2022, and after 2024 it may reach 100 million tons.



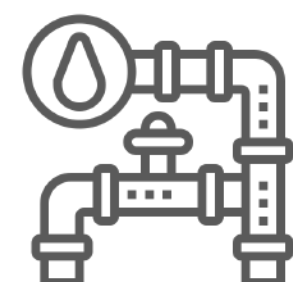
Kazakhstan has increased oil production by 3.5 times over the past 30 years, and in oil production in 2021 it ranks 13th in the world (2% of global production)



The largest oil development and production projects are Tengizchevroil LLP (31%), North Caspian Operating Company N.V. (19%) and Karachaganak Petroleum Operating N.V. (13%)



More than 80% of the oil produced in Kazakhstan is exported, and the rest is supplied to the domestic market for processing



The total length of the gas transportation system of the Republic of Kazakhstan is more than 56 thousand km of gas distribution networks, more than 20 thousand km of main gas pipelines and 56 compressor stations

## Main conclusions



In the structure of Kazakhstan's total exports for 2021, oil accounts for 51.5% of all goods, and gas – for 3.8%. For 2020 – 50.5% and 5.3%, respectively



By the end of 2021 production of gasoline of all brands amounted to 4.81 million tons (+ 7.4% compared to 2020): exports - 0.1, domestic consumption - 4.71, aviation fuel - 0.59 (+33.1%). Diesel fuel production – 4.99 million tons (+6.8%): import - 0.3, export - 0.2, and its domestic consumption - 5.1.



The republican budget of Kazakhstan is replenished by 30-50% at the expense of the oil and gas industry



Over the past 10 years, the average share of oil and gas in the gross inward investment to Kazakhstan was about 33%



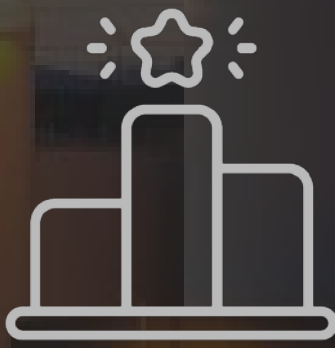
Kazakhstan's energy exports is still dependent on transit countries



The recovery of global demand for energy resources, high oil and gas prices allow increasing the volume of revenues from the oil and gas sector



2% of the  
world reserves



12th place in oil  
14th place in gas



Oil reserves for more  
than 45 years

## Reserves

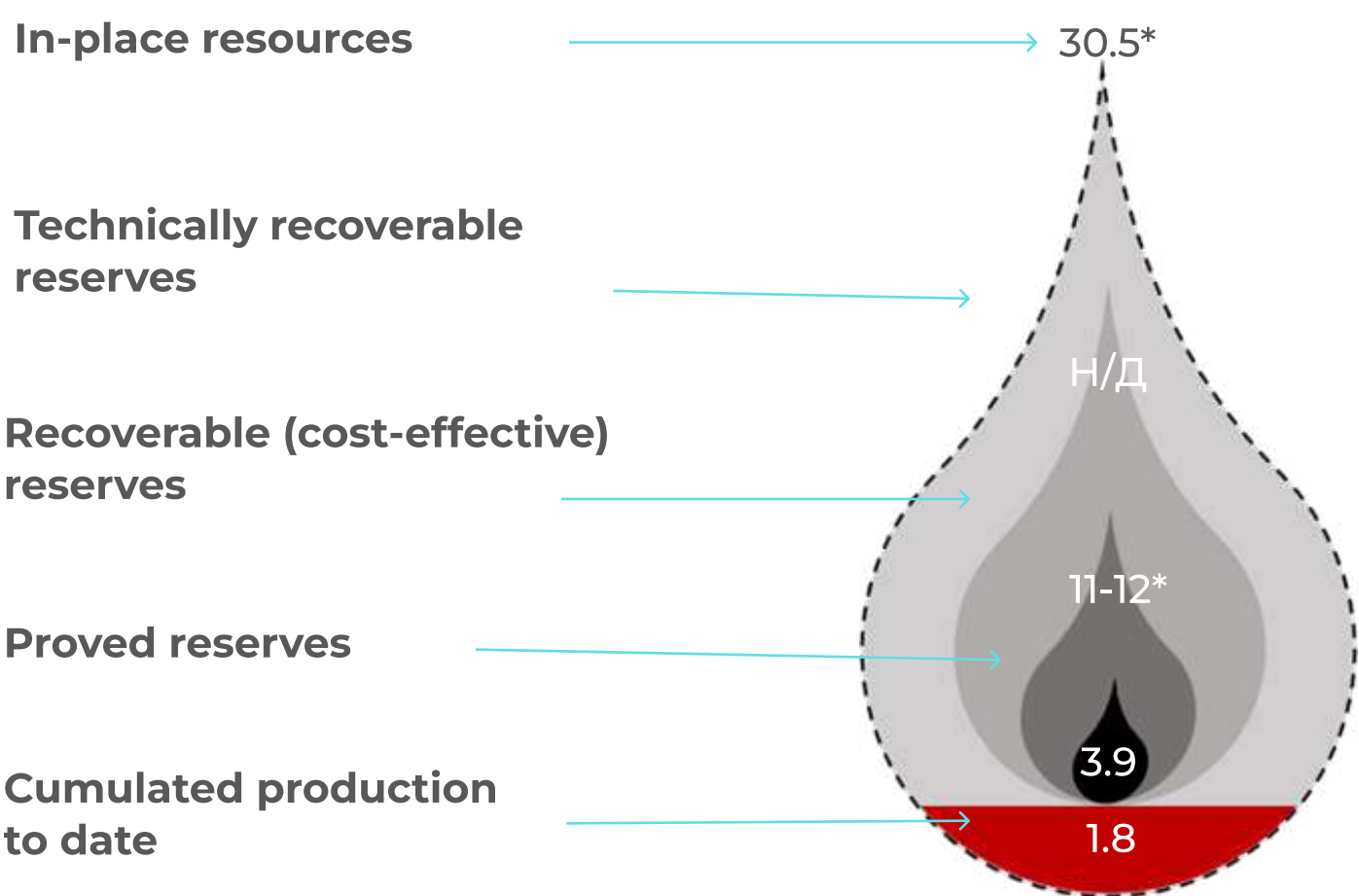
More than 200 oil deposits have been discovered on the territory of Kazakhstan. 62% of the country's area is occupied by petroliferous regions. A significant part of the deposits is focused in the west of Kazakhstan: in Atyrau, Mangistau, West Kazakhstan and Aktobe regions. The largest deposits by recoverable reserves are **Kashagan** (1-2 billion tons\*), **Tengiz** (0.75 - 1.125 billion tons\*), **Karachaganak** (1.35 trillion m3 of gas and 1.2 billion tons of oil), **Uzen** (1.1 billion tons\*), Kalamkas (67.6 million tons\*) and Zhetybai (68 million tons\*).

In terms of proved oil reserves, Kazakhstan's ranks **12th place in the world - 3.9 billion tons**. Natural gas reserves amount to **2.7 trillion cub. m. - 14th place in the world**.

At the current production level, Kazakhstan's proved oil and condensate reserves are sufficient for **more than 45 years**.

\*Estimate

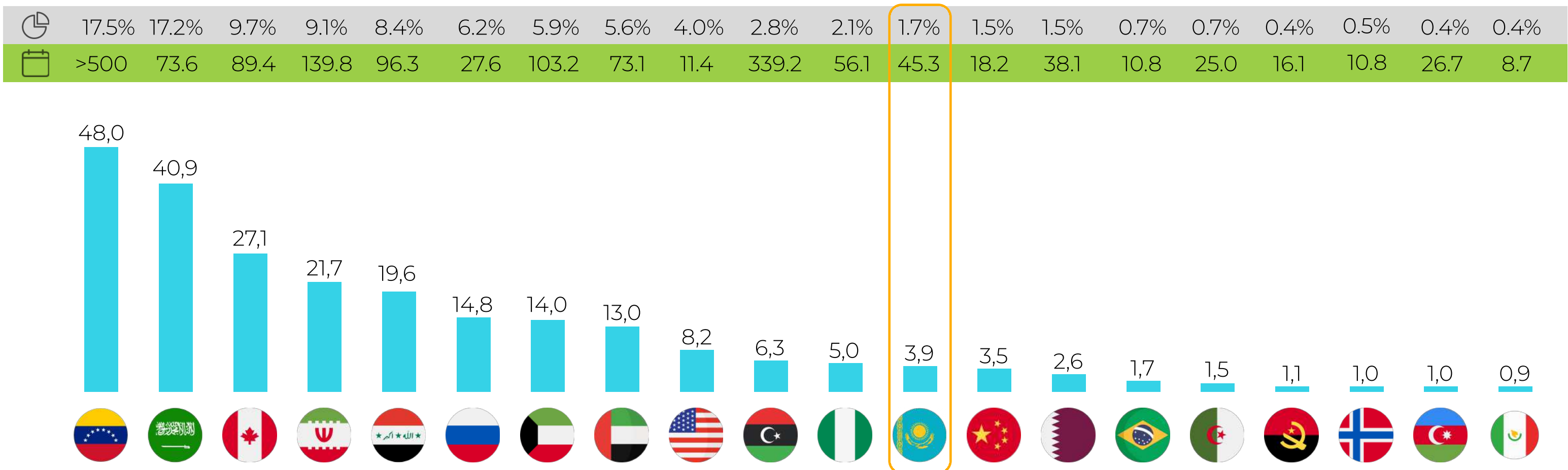
### Estimated oil reserves, billion tons



1.8 billion tons of oil have been extracted from 1990 to the present day.

The study of subsurface areas in the waters of the Caspian and Aral Seas will further expand the country's resource potential with proper financing for geological exploration.

### Proved oil and condensate reserves by countries, billion tons



Source: British Petroleum, the US Energy Information Administration, BNS data





**85.9**  
million tons



**54.2**  
million tons

## Oil and gas production

In 2021, oil production amounted to **85.9 million tons** (the share of domestic consumption – 23%), and gas production – **54.2 billion cub. m.** (61%).

Kazakhstan has increased oil production by **3.5 times** over the past 30 years, and in oil production in 2021 it **ranks 13th** in the world (2% of global production)

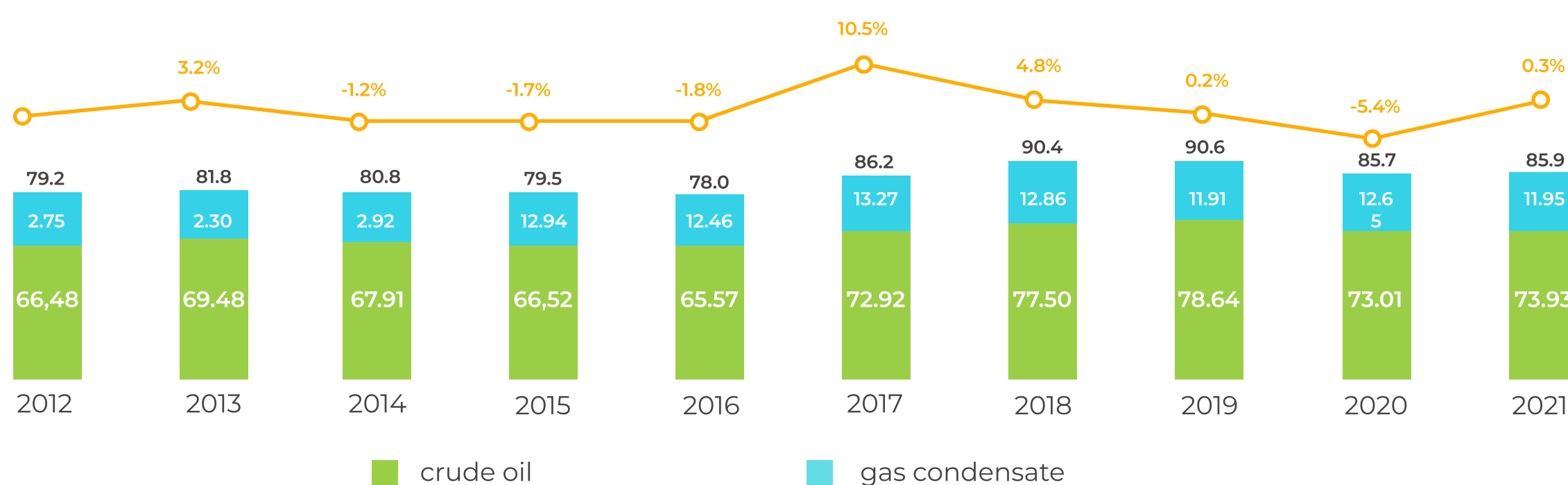
Natural gas production has increased almost **6 times** since Kazakhstan gained independence.

The steady and stable hydrocarbon production growth in Kazakhstan contributed to entering the top 10 oil exporting countries.

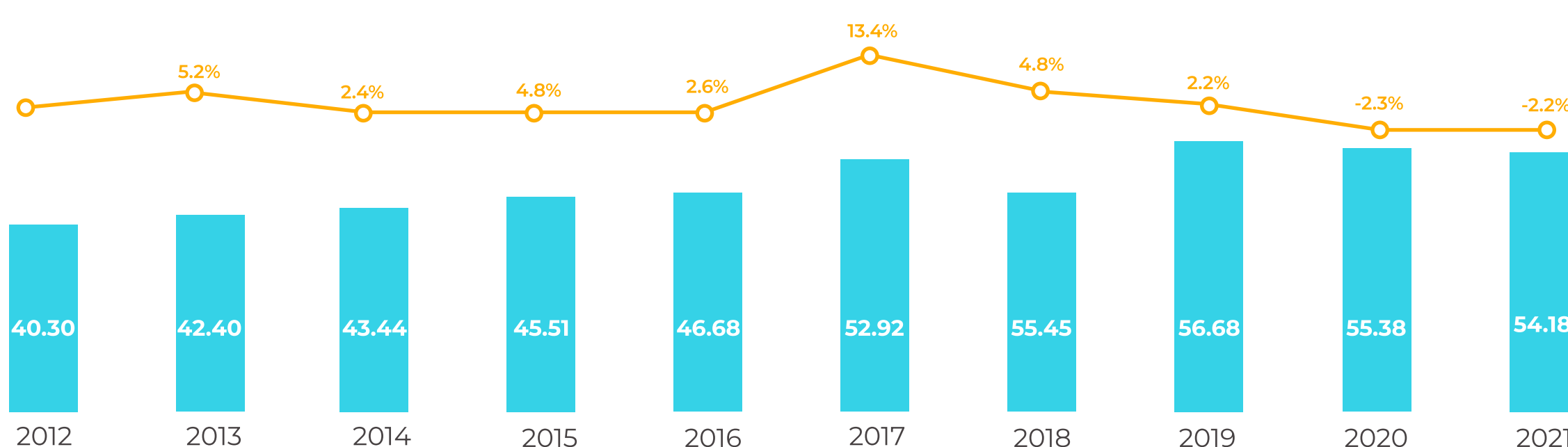
In the short and medium term, due to favourable market conditions and excess demand in the energy markets, the volume of oil and gas production in Kazakhstan will tend to increase significantly.

Oil production is expected to amount to about 87 million tons in 2022, and after 2024 it may reach 100 million tons.

### Dynamics of oil and condensate production, million tons



### Dynamics of natural gas production, billion cub. m.



Source: BNS



31%



19%



13%

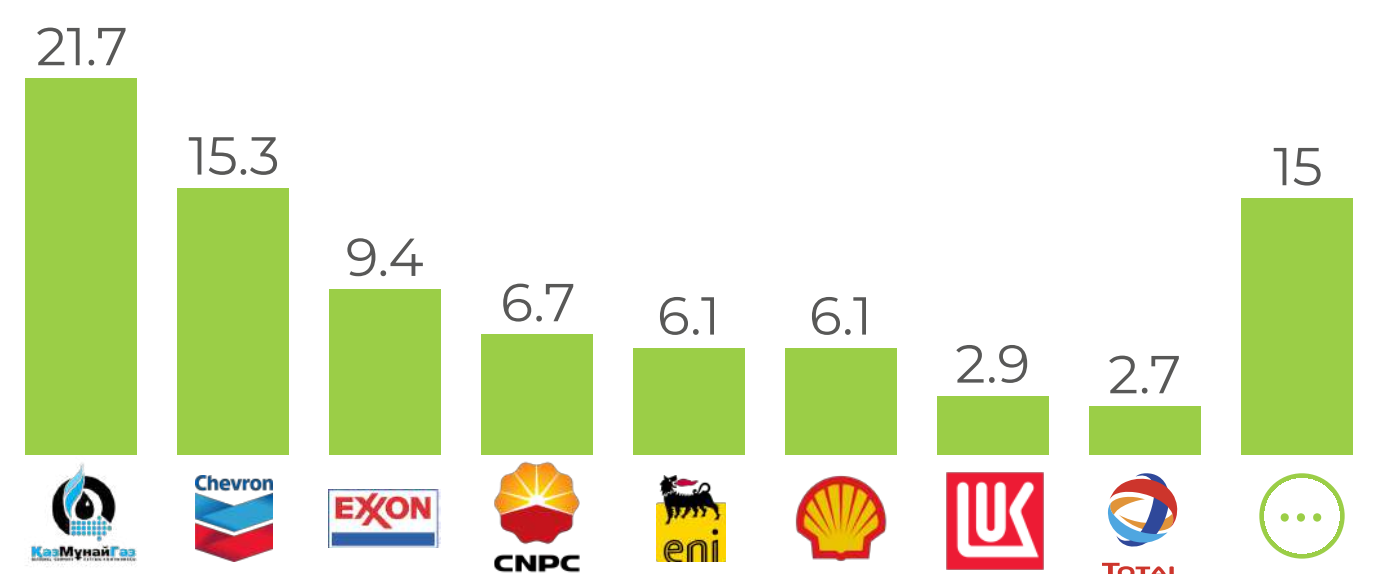
## Production patterns

The largest oil development and production projects are **Tengizchevroil LLP (TCO)**, **North Caspian Operating Company N.V. (NCOC)** and **Karachaganak Petroleum Operating N.V. (KPO)**

The production patterns are represented by the world's largest companies, such as **Chevron** (USA), **ExxonMobil** (USA), **CNPC** (China), **ENI** (Italy), **Shell** (UK), **Lukoil** (Russia), **Total** (France) and others.

**KazMunayGas** National Campaign is the leader of Kazakhstan's oil and gas industry with full integration at all stages of the value-added chain.

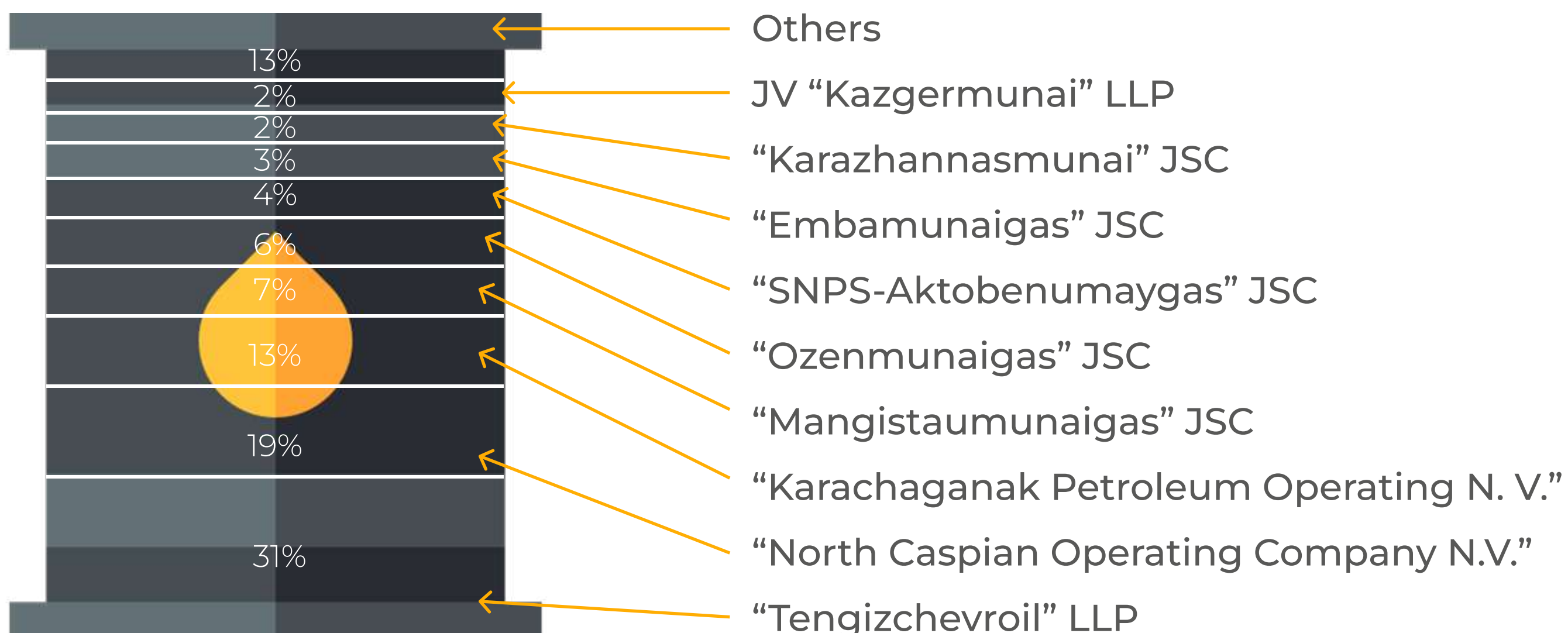
### Oil production patterns by companies, million tons



Despite the high diversification and significant participation of the national company, most of the oil and gas production is controlled by foreign partners. Annually, about 35% of export revenue is paid to foreign investors.

By the way, the expiration date of contracts: TCO – 2033, NCOC – 2041, KPO – 2037.

### Oil production patterns by projects, %





### Exports



**77.6\***  
million tons

### Transit



**20.0\***  
million tons

### Domestic market



**26.1**  
million tons

## Oil transportation

Oil transportation is carried out using oil pipelines, which are the cheapest and environmentally friendly.

More than 80% of the oil produced in Kazakhstan is exported (in particular through CPC), and the rest is supplied to the domestic market for processing.

Major companies:

- **“Caspian Pipeline Consortium” (CPC)**

Routes: Tengiz-Novorossiysk

Capacity: 67.0 million tons

Length: 1 510 km (452 km – the Republic of Kazakhstan)

- **“KazTransOil JSC”**

Routes: Refineries of Kazakhstan, Uzen-Atyrau-Samara, Port of Aktau, throughput to CPC and Atasu-Alashankou

Capacity: 17.5 million tons (Atyrau-Samara), 5.2 million tons (Port of Aktau)

Length: 5 372 km

- **“Kazakhstan-China Pipeline” LLP**

Routes: Atasu-Alashankou, Kenkiyak-Kumkol

Capacity: 20.0 million tons

Length: 1 759 km

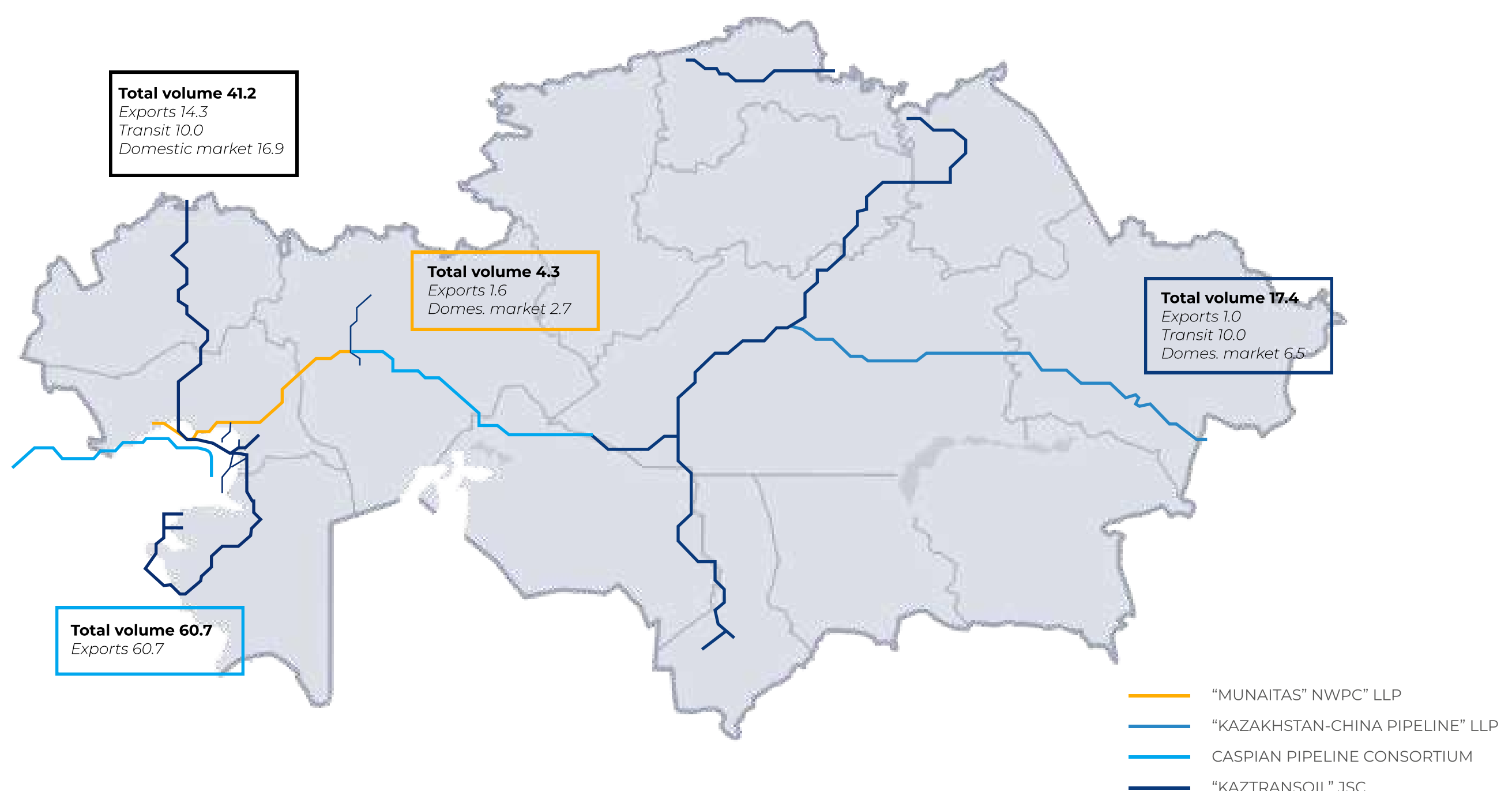
- **“MunaiTas” LLP**

Routes: Kenkiyak - Atyrau

Capacity: 6.0 million tons

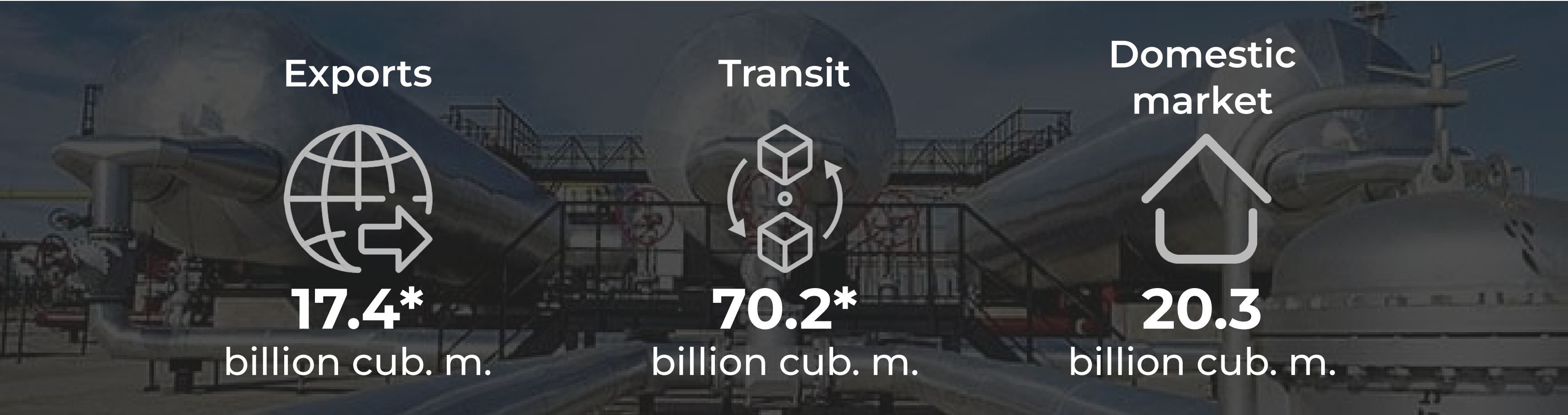
Length: 449 km

### Oil transportation volume by main networks, million tons



Source: KMG Annual Report for 2021 (\*consolidated data)





## Транспортировка газа

The system of trunk and distribution gas pipelines is widespread in Kazakhstan.

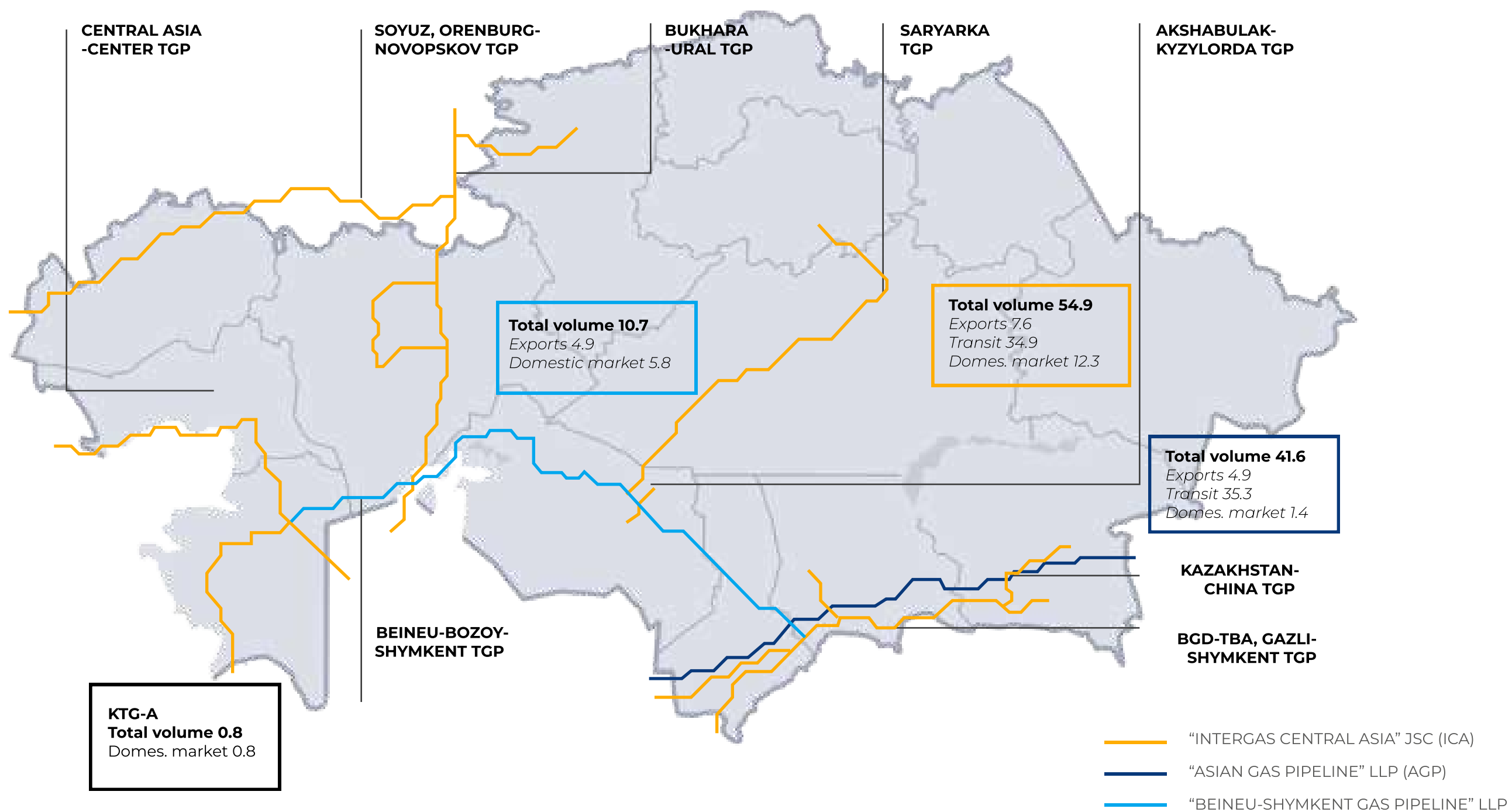
NC "QazaqGaz" JSC is a national company in gas and gas supply and manages a centralized infrastructure for the transportation of commercial gas through main gas pipelines.

The total length of Kazakhstan's gas transportation system is more than **56 thousand km** of gas distribution networks, more than **20 thousand km** of main gas pipelines and **56** compressor stations.

Major companies:

- **“Intergas Central Asia” JSC**  
Routes: Kazakhstan, Russia, Uzbekistan, Turkmenistan  
Capacity: 198 billion cub. m.  
Length: 15 260 km
- **“Asian Gas Pipeline” LLP**  
Routes: Kazakhstan-China  
Capacity: 55 billion cub. m.  
Length: 3 916 km
- **“Beineu-Shymkent Gas Pipeline” LLP**  
Routes: Beineu-Bozoy-Shymkent  
Capacity: 15 billion cub. m. Length: 1 454 km
- **“KTG-Aimak» JSC**  
Routes: Domestic market  
Length: 59 182 km

### Gas transportation volume, billion cub. m.



Source: KMG Annual Report for 2021 (\*consolidated data)



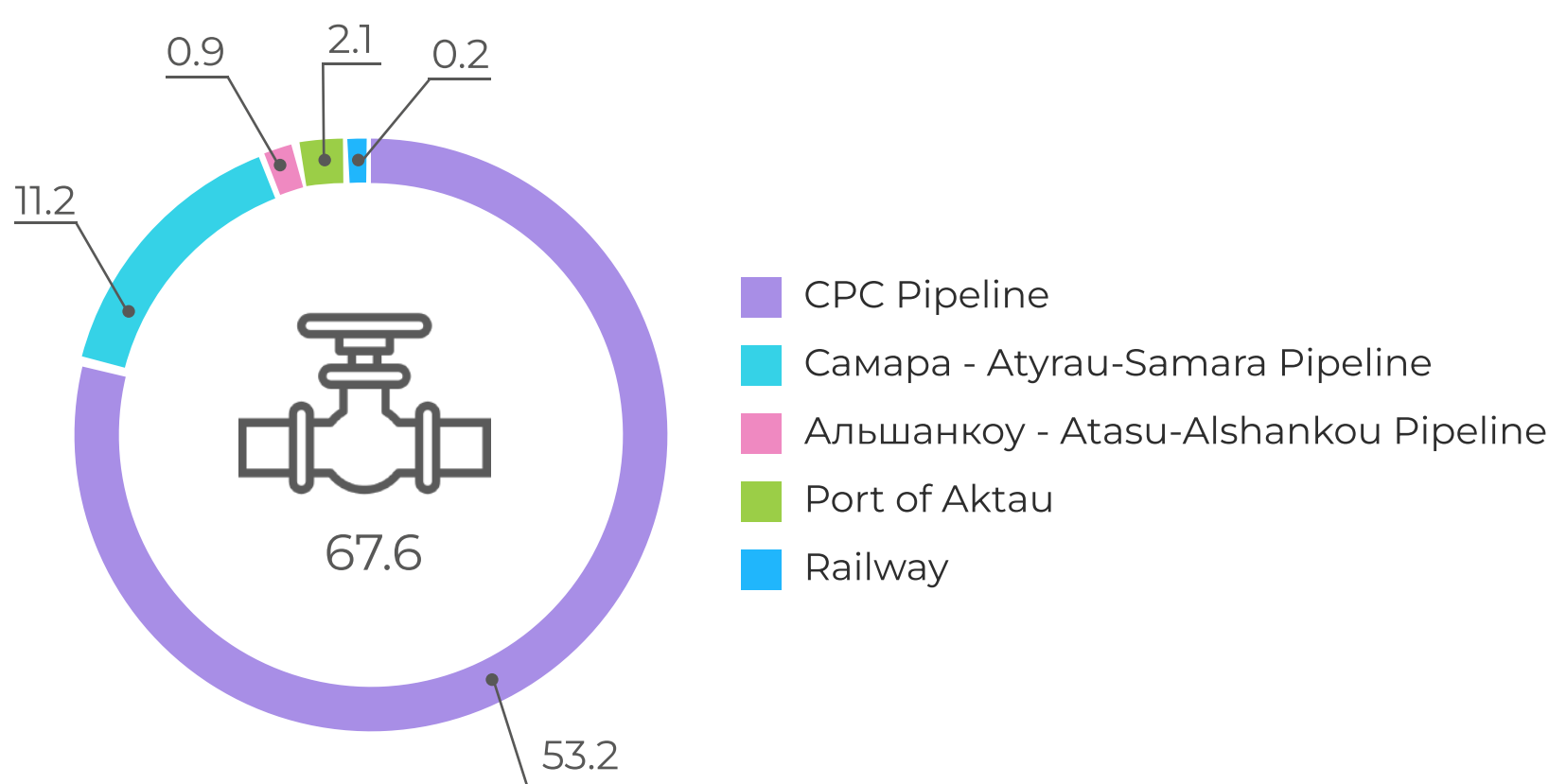
## Exports

In the structure of Kazakhstan's total exports for 2021, **oil** accounts for **51.5%** of all goods, and **gas** – **for 3.8%**. For 2020 – 50.5% and 5.3%, respectively.

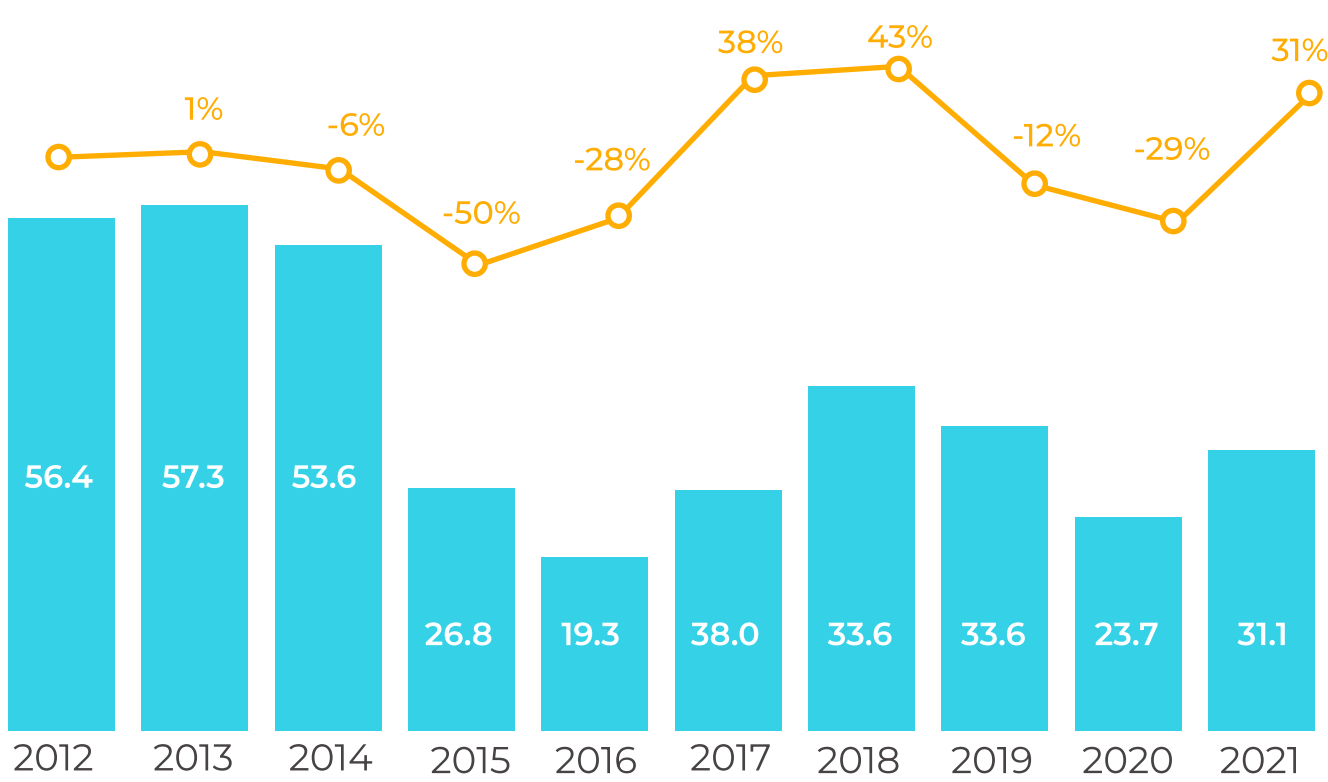
More than **96% of the oil** was exported through **pipelines** and more than **70%** of the total volume was sent to **European countries**.

China has been the main consumer of Kazakh gas in recent years.

Oil export channels, million tons



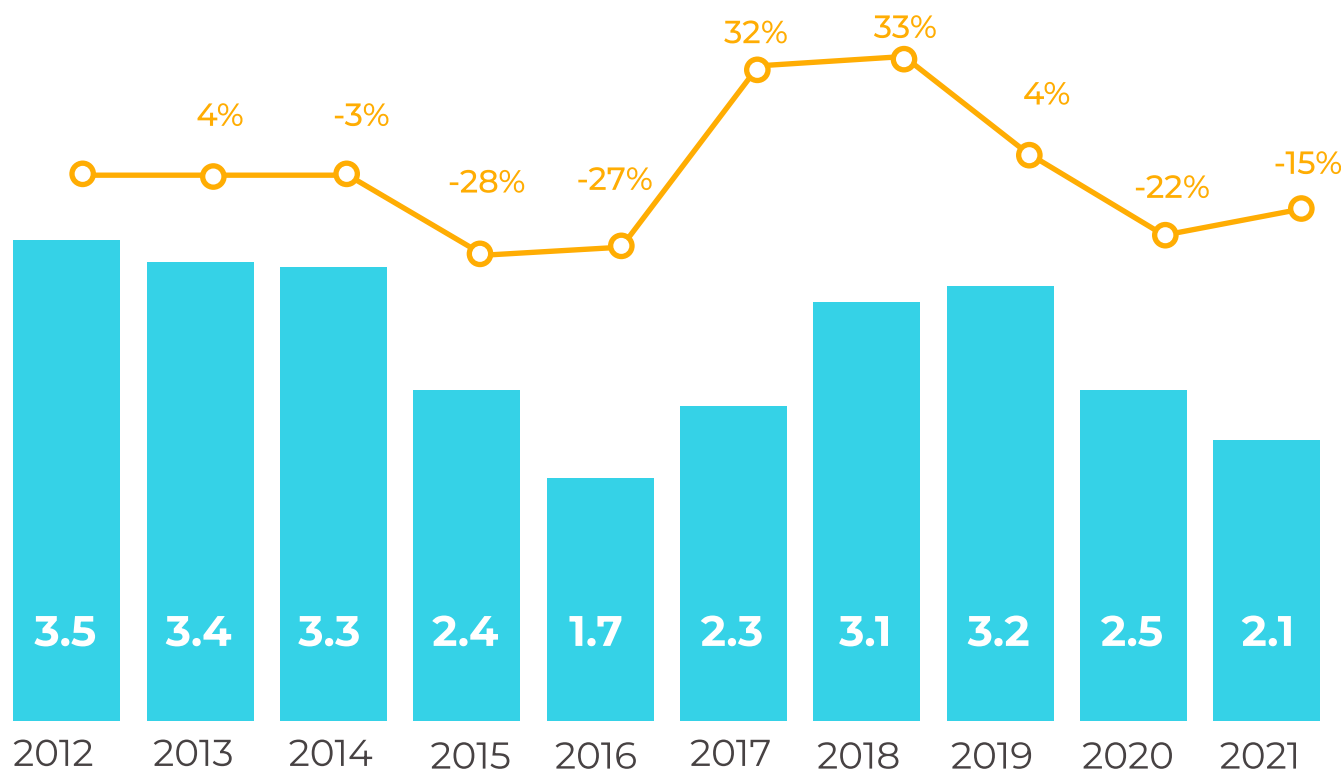
Dynamics of oil exports, billion dollars



Exports by contries, 2021

	Italy	8.62	27.7%
	Netherlands	3.73	12.0%
	France	2.09	6.7%
	China	1.86	6.0%
	the Republic of Korea	1.70	5.5%
	Turkey	1.67	5.4%
	Spain	1.56	5.0%
	India	1.53	4.9%
	Romania	1.43	4.6%
	Greece	1.22	3.9%
	Other countries	5.68	18.3%
<b>TOTAL</b>		<b>31.09</b>	<b>100%</b>

Dynamics of gas exports, billion dollars

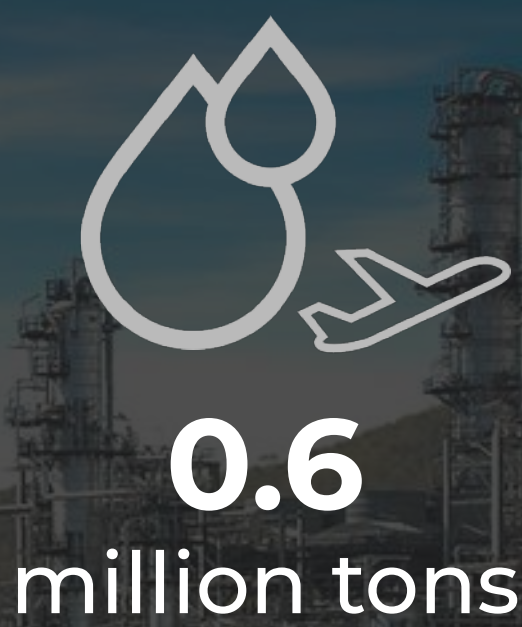
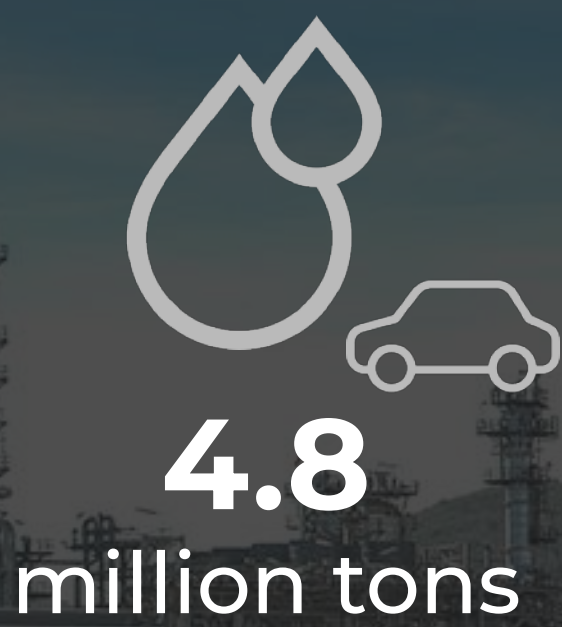


Exports by countries, 2021

	China	1.083	51.5%
	Ukraine	0.240	11.4%
	Tajikistan	0.170	8.1%
	Russia	0.160	7.6%
	Turkey	0.110	5.2%
	Algeria	0.108	5.1%
	Kyrgyzstan	0.052	2.5%
	Romania	0.033	1.6%
	Switzerland	0.033	1.6%
	Poland	0.032	1.5%
	Other countries	0.081	3.8%
<b>TOTAL</b>		<b>2.10</b>	<b>100%</b>

Source: BNS, KMG Annual Report for 2021





## Oil refining

The main share of oil refining is carried out by four refineries (refineries) in Kazakhstan: **Atyrau, Pavlodar, Shymkent (PKOP) and Caspi Bitum.**

The share of light petroleum products (gasoline, diesel fuel, aviation fuel and liquefied gas) at the refinery is 71%, dark (fuel oil, bitumen and vacuum gas oil) – is 23%, petrochemicals and other refined products – are 6%.

The oil refining volume at the refinery amounted to **17.03 million tons** (7.7% more than in 2020) by the end of 2021.

The production of **gasoline** of all brands amounted to **4.81 million tons** (an increase of 7.4%): export - 0.1, dom. consumption - 4.71, **aviation fuel** – **0.59 million tons** (an increase of 33.1%), **diesel fuel** – **4.99 million tons** (an increase of 6.8%): import - 0.3, export - 0.2, dom. consumption - 5.1.

POL retail prices on 08/09/2022, tenge/l

Ai-92	177.6
Ai-95/96	207.4
Ai-98	234.8
Winter diesel fuel	332.2
Summer diesel fuel	236.6



Three refineries were upgraded in 2018, and this led to an increase in the installed capacity of the plants by 26% and the transition to petroleum products manufacture that meets K4 and K5 environmental standards.

Although the capacity of the plants is enough to ensure domestic consumption for now, part of the POL is exported due to the relatively low price, periodically creating an artificial shortage in the domestic market. In Kazakhstan, gasoline price is **3 times lower** than the world average.

### Key indicators of oil refineries, 2021

	Atyrau oil refinery	Pavlodar oil refinery	Shymkent oil refinery(PKOP)
Design capacity	5.5	6.0	6.0
Refining output, million tons	5.5	5.4	5.1
Output of light petroleum products, %	63	69	80
Индекс Nelson Complexity Index*	13.9	10.5	8.2

\* a reference system used to assign values to refineries based on their level of complexity





**30-50%**

of budget revenues from the oil and gas industry



**46%**

FDI share in the oil and gas industry

## Oil and gas sector

Oil and gas condensate provide about **60% of** Kazakhstan's **commodity exports**.

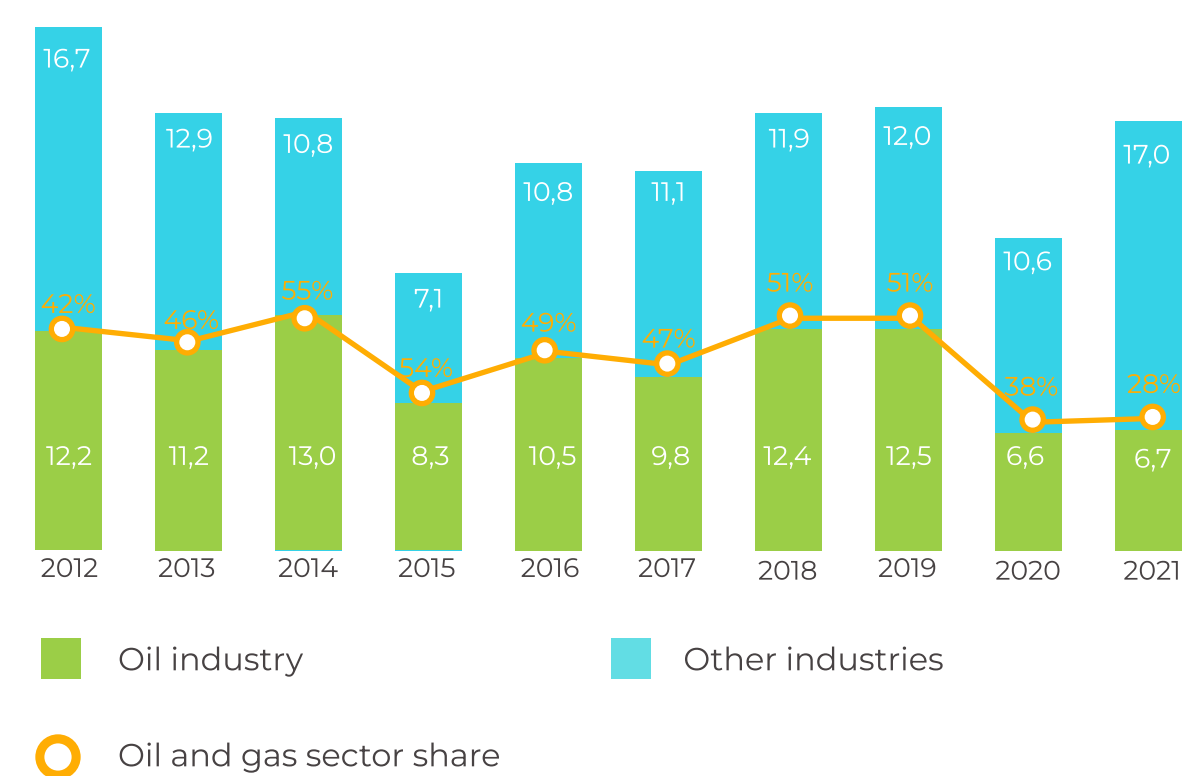
**The National Fund is 99%** replenished by revenues from the oil and gas sector.

**Transfers** from the National Fund to the Republican budget amount to **30-45%** over the past 10 years.

**The Republican budget is replenished by 30-50% by the oil and gas industry**, including the amounts of export customs duties on crude oil and petroleum products.

The income amount to the National Fund directly depends on the oil price.

### Gross DFI inflows, billion dollars

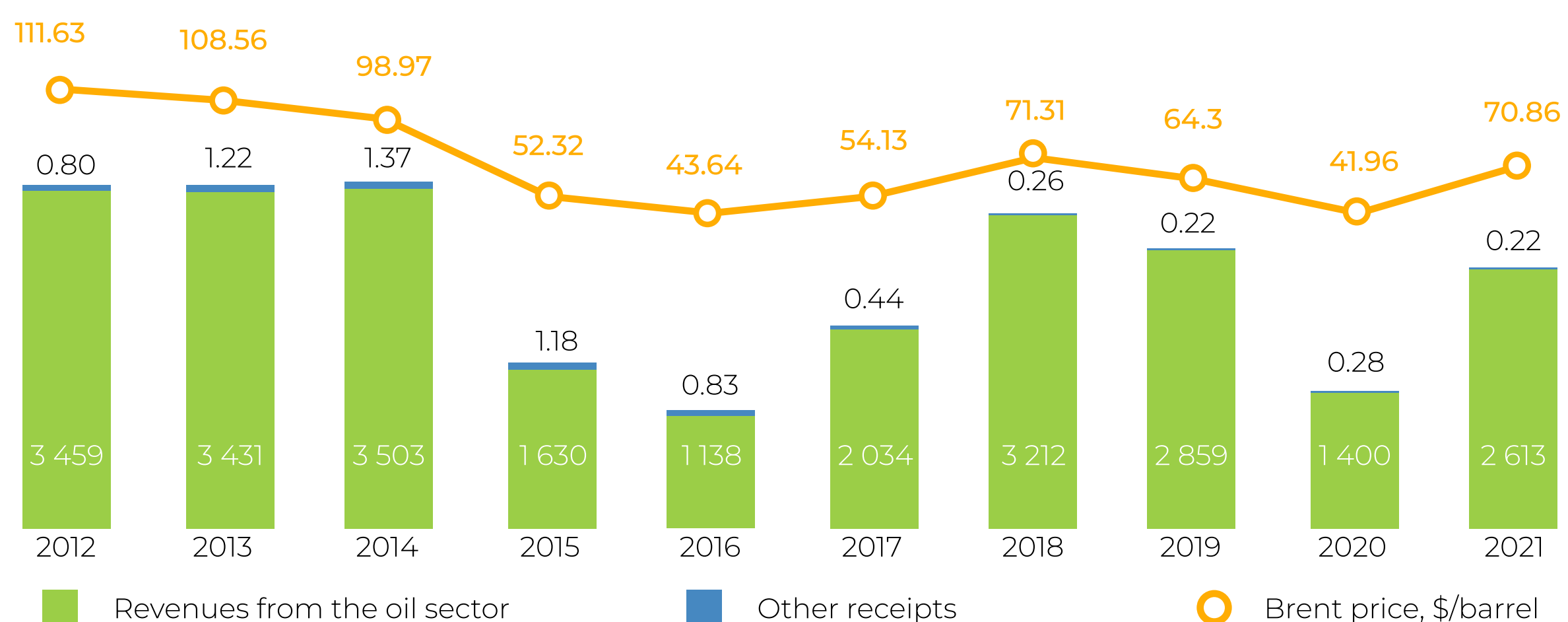


Source: the NBRK

**The average share of oil and gas in the gross direct foreign investment (DFI) inflows to Kazakhstan was about 46% over the past 10 years.**

It is necessary to maintain a high level of investment in the following years to develop the industry.

### Dynamics of receipts to the National Fund and oil price, billion tenge



Source: State Revenue Committee of the Republic of Kazakhstan, the US Energy Information Administration



## Threats and risks

There is uncertainty in the global energy markets today. In addition, anti-Russian sanctions and currency fluctuations also negatively affect the country's export potential.

The major risks of Kazakhstan's oil and gas industry are:

- Dependence of Kazakhstan's energy exports on transit countries;
- Lack of investment resources due to the high capital intensity of projects and the shift to green energy;
- The low-cost build-up by OPEC+ countries despite the dynamics of demand, as well as the active involvement of Iran as an oil seller without sanction restrictions.
- The increase in the cost of oil production at old deposits and the tightening of oil company regulations;
- Insufficient infrastructure development. For example, the low throughput capacity of pipelines and the Kazakhstan sector of the Caspian Sea;
- The trend of carbon neutrality transition in the oil and gas industry;
- The introduction of the EU carbon tax, which can significantly reduce oil export revenues;
- A large share of revenues from oil and gas production and exports go to foreign companies;
- A possible global recession may lead to a decrease in demand for energy resources and a reduction in industrial production;
- Uncompetitiveness of the oil refining sector and poor development of the petrochemical sector;

## Prospects and trends

There has been a tendency for energy demand to outstrip supply since 2021. Due to the containment of crude oil production by OPEC+ members and the recovery of economic activity after the COVID-19 pandemic, the price of Brent crude oil in 2022 surged to record values. According to the US Energy Information Administration forecasts, the average oil price will be \$105 per barrel in 2022 and \$95 in 2023.

We can note following prospects for the industry:

- Recovery of global energy demand and high oil and gas prices. And according to forecasts of international experts, implementation of a new supercycle of persistently high oil prices;
- Limited global hydrocarbon reserves at depletion and increased complexity of production at old deposits;
- Slowing down the expansion of the renewable energy sources share;
- High demand for energy resources from China, India and the EU (energy crisis);
- The geopolitical difficulties of using and obtaining gas for European countries strengthen the demand for a substitute in the form of oil and its refined products;
- Changing the structure of global demand for crude oil from mainly the fuel and energy industry to the needs of construction, agriculture and the production utility goods;
- Cost reduction and improvement of technologies for the production of various polymers will ensure constant demand, which will significantly reduce the volatility of oil prices;
- Increased demand for petrochemical products. According to our [Scoring](#), the petrochemical industry has one of the best development potentials in Kazakhstan.





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