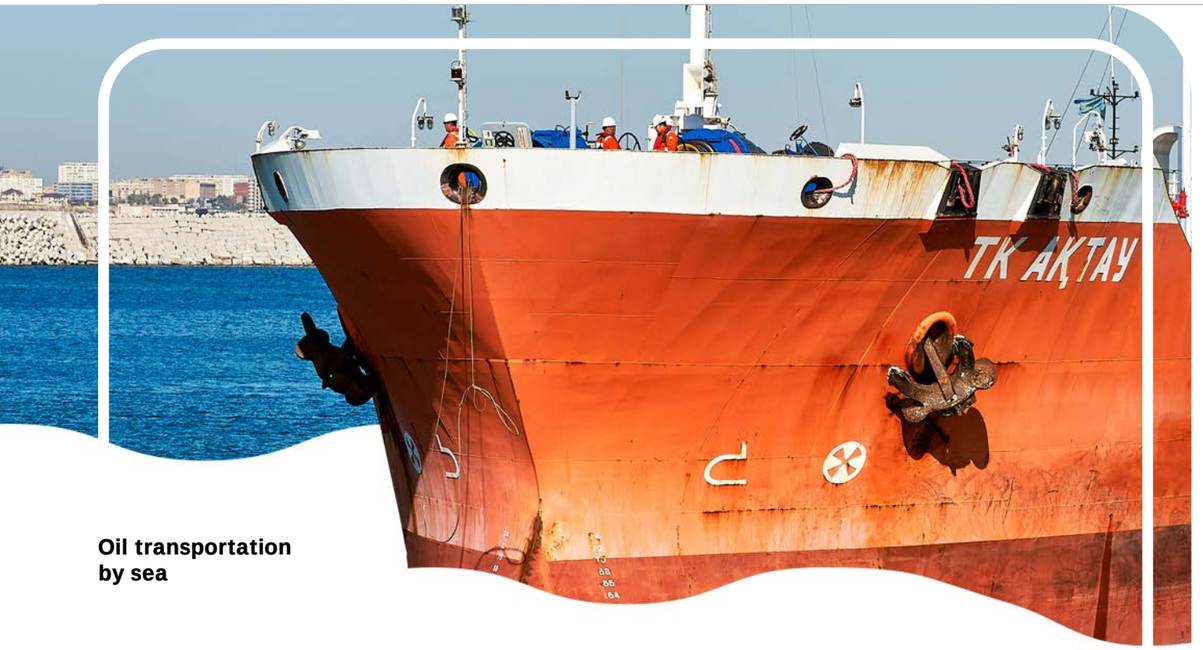


Oil transportation by sea

Transportation assets

Engaged in:
- oil transportation in the Caspian Sea and open seas;
- dry and container cargo transportation;
- provision of fleet support services for offshore operations.

Its assets include:
- merchant fleet – oil tankers (Astana, Almaty and Aktau, each with a deadweight of 12,000 tonnes) and Aframax oil tankers (Alatau and Altai, each with a deadweight of 115,000 tonnes);
- dry cargo fleet (5,000-tonne Beket Ata and Turkestan vessels);
- marine support fleet: 4 barge platforms of KMG series with a capacity of 3,600 tonnes each;
- container fleet: Barys and Sunkar with a capacity of 5,200 tonnes or 350 TEUs each,
- Berkut, an MCV-class vessel with capacity of 5,200 tonnes, and 3 tugboats – Talas, Emba and Irgiz with a bollard pull of 40 tonnes-force each;

The main routes for oil transportation by sea go across:
- Caspian Sea;
- Black Sea and Mediterranean Sea.

Performance highlights

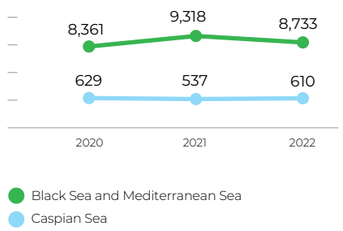
In 2022, total sea transportation shrank by 512 thous. tonnes year-on-year to 9,343 thous. tonnes due to less oil shipped by KazMunayGas Trading from Petromidia Refinery.

In September 2022, the auxiliary multifunctional vessel Sunkar was reequipped to transport containers along the Aktau–Baku–Aktau feeder line.

In November 2022, Berkut conversion into a container vessel started.

In December 2022, KMG's Investment Committee approved the purchase of two oil tankers with a deadweight of 8,000 tonnes each.

Marine fleet transportation, thous. tonnes



NMSC Kazmortransflot (KMTF) is the National Sea Carrier

DOWNSTREAM

22.1 mln tonnes
sales of own oil and condensate produced by KMG in 2022

19.9 mln tonnes
Consolidated hydrocarbon refining volumes in 2022

The Company has completed a number of major modernisation projects across its oil refineries in Kazakhstan and Romania, successfully achieving higher refining depths. KMG's Strategy until 2031 has set the following goals:

- improving the refining depth at Kazakhstan refineries to at least 89%;
- increasing the output of high-margin petrochemicals at Kazakhstan refineries;
- ramping up vertical integration at KMGI by adding more filling stations across its footprint to boost margins.

Oil and condensate marketing

In 2022, sales of own oil and condensate produced by KMG amounted to 22,126 thous. tonnes, including 13,712 thous. tonnes of oil exports, and 8,415 thous. tonnes of domestic oil supplies. Supplies to KMG refineries in Kazakhstan are fully included in domestic oil supplies: 3,043 thous. tonnes to Atyrau Refinery, 3,340 thous. tonnes to Pavlodar Refinery, and 1,568 thous. tonnes to Shymkent Refinery.

Sales of KMG-produced oil and condensate, thous. tonnes

Assets	2020			2021			2022		
	Export	Domestic market	Total	Export	Domestic market	Total	Export	Domestic market	Total
Operating assets[1]	7,524	6,849	14,373	6,126	7,916	14,042	5,472	8,412	13,884
including subsidiaries and associates[2]	4,911	3,514	8,428	3,805	4,458	8,262	3,173	4,907	8,080
Megaprojects[3]	7,637	2	7,639	7,619	0	7,619	8,240	3	8,243
Total	**15,161**	**6,851**	**22,012**	**13,745**	**7,916**	**21,661**	**13,712**	**8,415**	**22,126**

Oil and condensate exports

In June 2022, all oil companies in Kazakhstan adopted the name of Kazkhstan Export Blend Crude Oil (KEBCO) for their products. On 1 November 2022, Platts began publishing quotes for this grade. Amid sanctions against Russian crude and shrinking supply of the Urals blend, KEBCO prices have been on a steady upward trend.

Brent-pegged taxes and levies associated with oil exports grew as global oil prices increased in 2022.

Oil and condensate sales to domestic buyers

Pursuant to the President's commission to adopt the so-called combined scheme at oil refineries and further commissions from the Government, KMG has been working to introduce this scheme at its refineries, taking into account the amendments being made to the Law of the Republic of Kazakhstan On State Regulation of Production and Sales of Certain Oil Products with respect to oil supplies to local refineries.

The combined scheme and amendments mentioned above provide for a subsoil user's affiliate to be recognised as an oil supplier subject to at least one of the following conditions:

- the oil supplier owns at least 50% of shares in the subsoil user;
- the subsoil user owns at least 50% of shares in the oil supplier;
- the oil supplier and subsoil user are controlled by one or more persons owning, directly or indirectly, a total of at least 50% of shares in the oil supplier and subsoil user.

OzenmunaiGas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating supply Atyrau, Pavlodar and Shymkent refineries with KMG's own crude oil, and the resulting refined products are subsequently sold wholesale domestically or for export.

1 — JSC Ozenmunaigas, JSC Embamunaigas, JSC Karazhanbasmunai, JV Kazgermunai LLP, JSC PetroKazakhstan Inc., Kazakhturkmunay LLP, Kazakhoil Aktobe LLP, JSC Mangistaumunaigaz, Amangeldy Gas LLP, Urikhtau Operating LLP
2 — JSC Ozenmunaigas, JSC Embamunaigas, Kazakhturkmunay LLP, Urikhtau Operating LLP
3 — KMG Kashagan B.V., KMG Karachaganak, Tengizchevroil LPP.

KMG refining assets

Within KMG's asset mix, four refineries in Kazakhstan and two in Romania are responsible for processing liquid hydrocarbons (primarily oil).

KMG refineries

Indicator	Kazakhstan refineries				Romania refineries	
	Atyrau Refinery	Pavlodar Refinery	Shymkent Refinery	CASPI BITUM	Petromidia Refinery	Vega Refinery
Location	Atyrau	Pavlodar	Shymkent	Aktau	Năvodari	Ploiești
Commissioning date	1945	1978	1985	2013	1979	1905
Design refining capacity, mln tonnes	5.5	6.0	6.0	1.0	6.0[4]	0.5
Hydrocarbon refining volumes in 2022, mln tonnes	5.2	5.5	6.2	0.9	5.3[5]	0.4
Refinery utilisation rate in 2022, %	95	92	103	90	88[6]	75
KMG interest, %	99.53	100	49.72	50	54.63	54.63
Nelson Index	13.9	10.5	8.2	–	10.5	–
Light product yield in 2022, %	59	71	76	–	86	–
Refinery co-owners	–	–	CNPC	CITIC	Romanian Government	Romanian Government

4 — Design capacity includes refining 5 mln tonnes of crude oil and 1 mln tonnes of other hydrocarbons per year.
5 — Total refining volume of 4.86 mln tonnes includes 3.98 mln tonnes of crude oil and 0.88 mln tonnes of other and alternative feedstocks.
6 — Petromidia Refinery utilisation rate is 97.5% based on Solomon Associates' methodology.

Consolidated hydrocarbon refining volumes	2020	2021	2022
Kazakhstan refineries			
Atyrau Refinery	5,016	5,473	5,224
Pavlodar Refinery	5,004	5,407	5,480
Shymkent Refinery (50%)	2,397	2,582	3,103
CASPI BITUM (50%)	433	464	461
Total for Kazakhstan refineries	**12,849**	**13,927**	**14,269**
Romania refineries			
Petromidia Refinery	4,864	4,586	5,258
Vega Refinery	364	321	373
Total for Romania refineries	**5,228**	**4,907**	**5,631**
Total	**18,077**	**18,833**	**19,900**

Consolidated oil product output	2020	2021	2022
Kazakhstan refineries			
Atyrau Refinery	4,525	4,867	4,647
Pavlodar Refinery	4,609	4,935	5,168
Shymkent Refinery (50%)	2,145	2,352	2,857
CASPI BITUM (50%)	428	460	456
Total for Kazakhstan refineries	**11,707**	**12,614**	**13,128**
Romania refineries			
Petromidia Refinery	4,749	4,831	5,512
Vega Refinery	361	320	370
Total for Romania refineries	**5,110**	**4,790**	**5,142**
Total	**16,817**	**17,445**	**18,639**

Refining volumes at Kazakhstan refineries

Nearly all key indicators set records in 2022. These included oil refining volumes, and petrol and diesel and jet fuel production. Wastes and flaring were at historical lows.

Shymkent Refinery processed over 6 mln tonnes of oil – more than in any year before – and set the time between repairs to three years, with Atyrau Refinery to follow suit soon.

Pavlodar Refinery is implementing important projects, such as production of winter diesel fuel, which is in short supply in Kazakhstan.

REFINERY DEVELOPMENT PLANS

Initiatives have been planned to boost the output of high-margin products at Kazakhstan refineries, improving their operational efficiency.

- Technical audit for repairs to be performed once in every three years.
- Implementation of the Action Plan with Energy and Resource Efficiency and Atmospheric Emission Reduction Targets for the Period until 2031.

ATYRAU REFINERY

- Engineering and survey activities (restoring the reformer's operability, ramping up the capacity of the Prime D hydrotreatment and dewaxing unit, and building a gas turbine power plant, unloading rack for straight-run naphtha and kerosene / gas oil fraction, and new pumping station to enable complete transition to automatic on-spot loading).
- Feasibility study (upgrading the delayed coker unit and building a de-asphalting unit).
- Installation of an oil metering station and floating roofs for tanks intended to store Tengiz oil before refining.
- Completion of the Tazalyq project, mechanical treatment plants upgrade at Atyrau Refinery, and reclamation of evaporation fields.

PAVLODAR REFINERY

- Selection of an EPC contractor for the project on reconstruction of the diesel hydrotreating plant including a dewaxing unit.
- Equipment procurement and start of construction and installation for the project on construction of an LPG treatment facility.

SHYMKENT REFINERY

- Completion of the pre-feasibility study for the project on expansion of Shymkent Refinery's production capacities (bringing the capacity to 9 or 12 mln tonnes per year).

CASPI BITUM

- Plans for reaching the design oil refining capacity of 1.0 mln tonnes per year.
- Procurement of results of the PFS for the project on expansion of CASPI BITUM LLP's capacity.
- Start of the development of a project design for the project on expansion of CASPI BITUM LLP's capacity.

PROSPECTIVE PROJECTS AND INNOVATIONS

- Restoration of the LG-35-11/300-95 reformer's operability (scheduled for 2022–2025).
- As work progresses to enable the refining of Tengiz oil and with the catalytic cracking unit at full capacity, an excess of off-balance straight-run naphtha is being created, which requires using LG-35-11/300-95 in winter.
- Construction of a gas turbine power plant (scheduled for 2023–2026).
- Upgrade of the delayed coker unit.
- Production of more jet fuel (repurposing the LG-35-11/300-95 hydrotreater, scheduled for 2023–2025).
- Expansion of the Prime D hydrotreatment and dewaxing unit's capacity (commissioning the third booster compressor).
- Expansion of the existing automatic on-spot loading unit (building a new pumping station).
- Construction of an unloading rack for straight-run naphtha and kerosene / gas oil fraction.
- Refining of Tengiz oil.
- Action Plan with Energy and Resource Efficiency and Atmospheric Emission Reduction Targets for the Period until 2031.

Under this plan, Atyrau Refinery works to reduce direct and indirect emissions by at least 12% by 2031 vs 2019.

PAVLODAR REFINERY

- Project on reconstruction of the diesel hydrotreating plant including a dewaxing unit. This initiative seeks to achieve a winter diesel fuel output of 160 thous. tonnes per year.
- Project on construction of an LPG treatment facility.

This initiative seeks to achieve a marketable LPG throughput and output of 100 thous. tonnes per year.

- Action Plan with Energy and Resource Efficiency and Atmospheric Emission Reduction Targets for the Period until 2031.

Under this plan, Pavlodar Refinery works to reduce direct and indirect emissions by at least 15% by 2031 vs 2019.

SHYMKENT REFINERY

- Shymkent Refinery expansion project (ramping up the capacity to 9 or 12 mln tonnes per year).

A variety of plant layouts are being considered to expand the existing production capacities to 9–12 mln tonnes per year.

A PFS by US-based Honeywell UOP is in progress.

- Action Plan with Energy and Resource Efficiency and Atmospheric Emission Reduction Targets for the Period until 2031.

Under this plan, Shymkent Refinery works to reduce direct and indirect emissions by at least 13% by 2031 vs 2019.

Refining tariffs

The tariff for refining oil under tolling arrangements embraces an operating and investment parts, financial liabilities and corporate income tax and may provide an opportunity to finance the enterprise's operation while maintaining efficiency and preventing it from making a loss.

Weighted average tariffs at Kazakhstan refineries, KZT/tonne (net of VAT)

Refinery	2020	2021	2022
Atyrau Refinery	41,168	42,434	42,515
Pavlodar Refinery	20,904	23,033	23,240
Shymkent Refinery	30,783	35,191	35,336
CASPI BITUM	18,003	18,472	24,901

Hydrocarbon refining volumes and oil product output in Kazakhstan

In 2022, hydrocarbon refining volumes at Kazakhstan refineries (net to KMG) amounted to 14,269 thous. tonnes, with oil product output at 13,101 thous. tonnes. The two measures grew by 2.5% and 4.1% respectively vs 2021, showing their best performance since Kazakhstan gained independence. This was driven by the postponing of scheduled repairs at Shymkent Refinery from 2022 to 2023 and higher refining volumes at Pavlodar Refinery.

Acquisition of a stake in PETROSUN. KMG's purview in oil product marketing

PETROSUN LLC was incorporated in Kazakhstan on 17 January 2012.

The members:
1. CNPC International in Kazakhstan LLP
2. JSC National Company KazMunayGas

In July 2022, the Company acquired a 49% stake in PETROSUN LLC, increasing KMG's share in the domestic market for oil products from 28% to 80%.

PETROSUN LLC's core activities:
- foreign trade, commerce, and export and import;
- sales of hydrocarbons and their derivatives;
- refining of hydrocarbons and their derivatives;
- procurement and refining of crude oil, natural gas, oil products, lubricants and fuels in Kazakhstan and elsewhere, including treatment, storage, sales and marketing, distribution, and import and export of crude oil, oil products and hydrocarbons and their derivatives, and procurement of materials and equipment (beyond the scope of natural monopolies);

Hydrocarbon refining volumes (net to KMG), thous. tonnes

	2020	2021	2022
Atyrau Refinery	5,016	5,473	5,224
Pavlodar Refinery	5,004	5,407	5,480
Shymkent Refinery (50%)	2,397	2,582	3,103
CASPI BITUM (50%)	433	464	461

Oil product output (net to KMG), thous. tonnes

Oil products	2020	2021	2022
Atyrau Refinery	4,525 (100%)	4,867 (100%)	4,647 (100%)
· Light[1]	2,737 (60%)	3,169 (65%)	2,988 (64%)
· Dark[2]	1,383 (31%)	1,499 (31%)	1,447 (31%)
· Petrochemicals[3]	250 (6%)	52 (1%)	85 (2%)
· Other	155 (3%)	147 (3%)	127 (3%)
Pavlodar Refinery	4,609 (100%)	4,935 (100%)	5,137 (100%)
· Light	3,438 (75%)	3,736 (76%)	3,879 (76%)
· Dark	896 (19%)	862 (18%)	927 (18%)
· Other	275 (6%)	337 (7%)	331 (6%)
Shymkent Refinery (50%)	2,145 (100%)	2,352 (100%)	2,857 (100%)
· Light	1,970 (92%)	2,035 (87%)	2,348 (82%)
· Dark	172 (8%)	313 (13%)	504 (18%)
· Other	3	4	5
CASPI BITUM (50%)	428 (100%)	460 (100%)	460 (100%)
· Dark	185 (43%)	203 (44%)	203 (44%)
· Other	243 (57%)	257 (56%)	257 (56%)
Total	**11,707**	**12,614**	**13,101**

Refining depth, %

Refinery	2020	2021	2022
Atyrau Refinery	77.15	77.24	75.72
Pavlodar Refinery	87.20	87.79	88.19
Shymkent Refinery	90.14	85.96	82.79

1 — Including petrol, diesel fuel, jet fuel and LNG.
2 — Including fuel oil, vacuum gas oil and bitumen.
3 — Including benzene and paraxylene.

- acquisition, storage and transshipment of oil products; and
- oil product transportation.

PETROSUN LLC aims to operate efficiently in Kazakhstan's oil product market, ensure energy security and maximise its profit from selling lubricants and fuels in the domestic oil product market and exporting them.

PETROSUN LLC refines the acquired crude oil at the following Kazakhstan refineries:

1. PetroKazakhstan Oil Products (Shymkent Refinery) – a 72% stake;
2. Pavlodar Refinery – a 41% stake;
3. Atyrau Refinery – a 29% stake.

PETROSUN LLC's oil products made at these refineries are sold to farm operators in the spring and autumn farming seasons, KTZ – Freight Transportation for the needs of its locomotive divisions, major filling station networks in Kazakhstan, buyers on an exchange, and town-forming industrial enterprises.

Kazakhstan refineries source and refine oil under the combined scheme, whereby the crude is supplied to and processed at refineries by subsoil users, their affiliated or associated marketing entities, and the refineries in their capacity as oil product makers. After processing the oil, a refinery returns the resulting oil products to the oil owners (resource holders) or sells them. In both cases, the products are then shipped from the refinery.

KMG and PETROSUN LLC dominate the domestic wholesale market for oil products, with aggregate shares of 91.3%, 71.4% and 81% in total sales of the AI-92 and AI-95 petrols and diesel fuel respectively (between October 2021 and September 2022).

Production and marketing of oil products derived from KMG's own oil

Ozenmunaigas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating supply Atyrau, Pavlodar and Shymkent refineries with KMG's own crude oil, and the resulting refined products are subsequently sold wholesale domestically or for export.

In 2022, Ozenmunaigas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating supplied 4,966 thous. tonnes of crude oil for refining, including 2,363 thous. tonnes to Atyrau Refinery, 1,992 thous. tonnes to Pavlodar Refinery, and 611 thous. tonnes to Shymkent Refinery. The refineries' combined output for the year was 4,893 thous. tonnes of refined products, including 60% of light products, 22% of dark products, 0.8% of petrochemicals, and 17% of other oil products.

Refinery output of oil products derived from KMG's own oil in 2022, thous. tonnes

Oil products	Atyrau Refinery	Pavlodar Refinery	Shymkent Refinery	Total	Average oil product wholesale prices over 12M 2022, KZT per tonne
Light[1]	1,284	1,241	426	2,951	191,453.50
Dark[2]	646	327	99	1,071	181,615.34
Petrochemicals[3]	38	0	0	38	405,172.46
Other	362	392	80	834	37,837.07
Total	**2,329**	**1,960**	**604**	**4,893**	**166,674.85**

1 — Light products include motor petrol, diesel fuel, and jet fuel.
2 — Dark products include fuel oil, vacuum gas oil, bitumen, and heavy petroleum feedstock.
3 — Petrochemicals include benzene and paraxylene.

KMG sells oil products wholesale after the oil purchased from Ozenmunaigas, Embamunaigas, Kazakhturkmunay and Urikhtau Operating is refined at refineries in Kazakhstan. From January to December 2022, KMG sold 4,908 thous. tonnes of oil products, primarily light products and fuel oil (79%).

The bulk of oil products was sold domestically (4,091 thous. or 83% out of 4,908 thous. tonnes), and the remainder was exported (816 thous. tonnes). The share of oil product exports in the total sales volume was down 3% year-on-year due to a ban on light product exports.

Wholesale of KMG oil products produced in the Republic of Kazakhstan, thous. tonnes

	2021			2022		
	Domestic market	Export	Total	Domestic market	Export	Total
Gasoline	1,195	–	1,195	1,333	7	1,340
Diesel fuel	1,291	57	1,348	1,513	–	1,513
Jet fuel	120	–	120	161	–	161
Fuel oil	241	542	783	265	588	853
Vacuum gas oil	–	166	166	–	105	105
Bitumen	83	–	83	125	–	125
Coke	79	66	144	56	65	121
Sulphur	3	17	20	5	14	19
Benzene	–	4	4	–	3	3
Paraxylene	–	25	25	–	34	34
Liquefied gas	162	1	163	204	–	204
Heating fuel	4	–	4	–	–	–
Process fuel	382	–	382	408	–	408
Other	18	–	18	22	–	22
Total	**3,577**	**877**	**4,454**	**4,092**	**816**	**4,908**

KMG supplies diesel fuel for agricultural field operations and provides social and production facilities, and institutions, with fuel oil during the heating season. In 2022, KMG also sold, through KazMunayGas-Aero and through exchange trading, jet fuel to local airports, airlines, and businesses.

The rest is sold to third parties domestically or abroad. In April 2022, KMG exported AI-92 petrol (7 thous. tonnes). Exports of light oil products dropped by 85% compared to 2021 due to increased domestic consumption in the Republic of Kazakhstan. In 2022, oil product exports were dominated by dark oil products shipped to Europe. Diesel fuel, petrochemicals, coke, sulphur and butane were supplied to Europe, China, Nigeria, Russia, Uzbekistan and Tajikistan.

Export of oil products broken down by share and supply destination

Oil products	2021			2022		
	Volume, tonne	Country	Share, %	Volume, tonne	Country	Share, %
Fuel oil	541,967	Europe	100	585,152	Europe	100
Vacuum gas oil	165,724	Europe	100	105,467	Europe	100
High-purity paraxylene	25,172	China	100	33,763	China	100
K4, K5, E-K4 summer diesel fuel	19,198	Europe	34	–	–	–
	28,461	Uzbekistan	50	–	–	–
	9,465	Tajikistan	17	–	–	–
Benzene	3,523	Russia	100	1,684	Russia	53
	–	–	–	1,498	Africa	47
Total coke	28,790	China	59	18,066	China	30
	20,121	Russia	41	42,978	Russia	70
Calcined coke	10,819	China	65	780	China	20
	5,918	Russia	35	3,170	Russia	80
Sulphur	12,069	Europe	71	8,041	Europe	59
	4,885	Africa, Nigeria	29	5,577	Africa	41
Gas (Butane)	489	Tajikistan	50	–	–	–
	482	Russia	50	–	–	–
AI-92 K4 petrol	–	–	–	7,454	Europe	100
Heavy petroleum feedstock for carbon black production	–	–	–	2,630	Russia	100
Total:	**877,083**			**816,259**		

Refining in Romania

The core business of KMG International is hydrocarbon refining, as well as wholesale and retail sales of oil products. The KMG International-owned Petromidia Refinery is responsible for primary hydrocarbon refining, with the Vega Refinery focusing on secondary refining. The Petromidia and Vega Refineries operate according to the model where refineries purchase hydrocarbons for their own account, refine them and then sell them either wholesale or retail through an owned retail network of filling stations.

KMG International also owns a major petrochemical complex producing polypropylene and low- and high-density polyethylene (LDPE and HDPE). In addition, KazMunayGas Trading AG, the trading subsidiary of KMG International, is focused on trading in crude oil and oil products produced by KMG International refineries or by third parties.

In 2022, our refineries in Romania processed 5,631 thous. tonnes of hydrocarbons and other feedstocks and produced 5,512 thous. tonnes of oil products. The volumes increased by 14.8% and 14.1% respectively year-on-year on average. The year-on-year growth in crude oil refining and oil product production was attributable to the pandemic-related restrictions of 2021, as a result of which less imported SRGO was processed due to a slumping demand, and to an incident at Petromidia Refinery in July 2021 causing its shutdown.

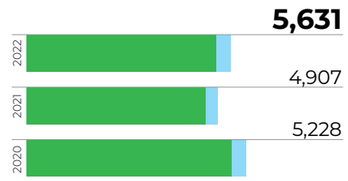
Petromidia Refinery's refining margin

Unit	2020	2021	2022
USD per tonne	-5	7.2	135
USD per bbl[1]	-0.7	1	17.8

Oil product output (net to KMG), thous. tonnes

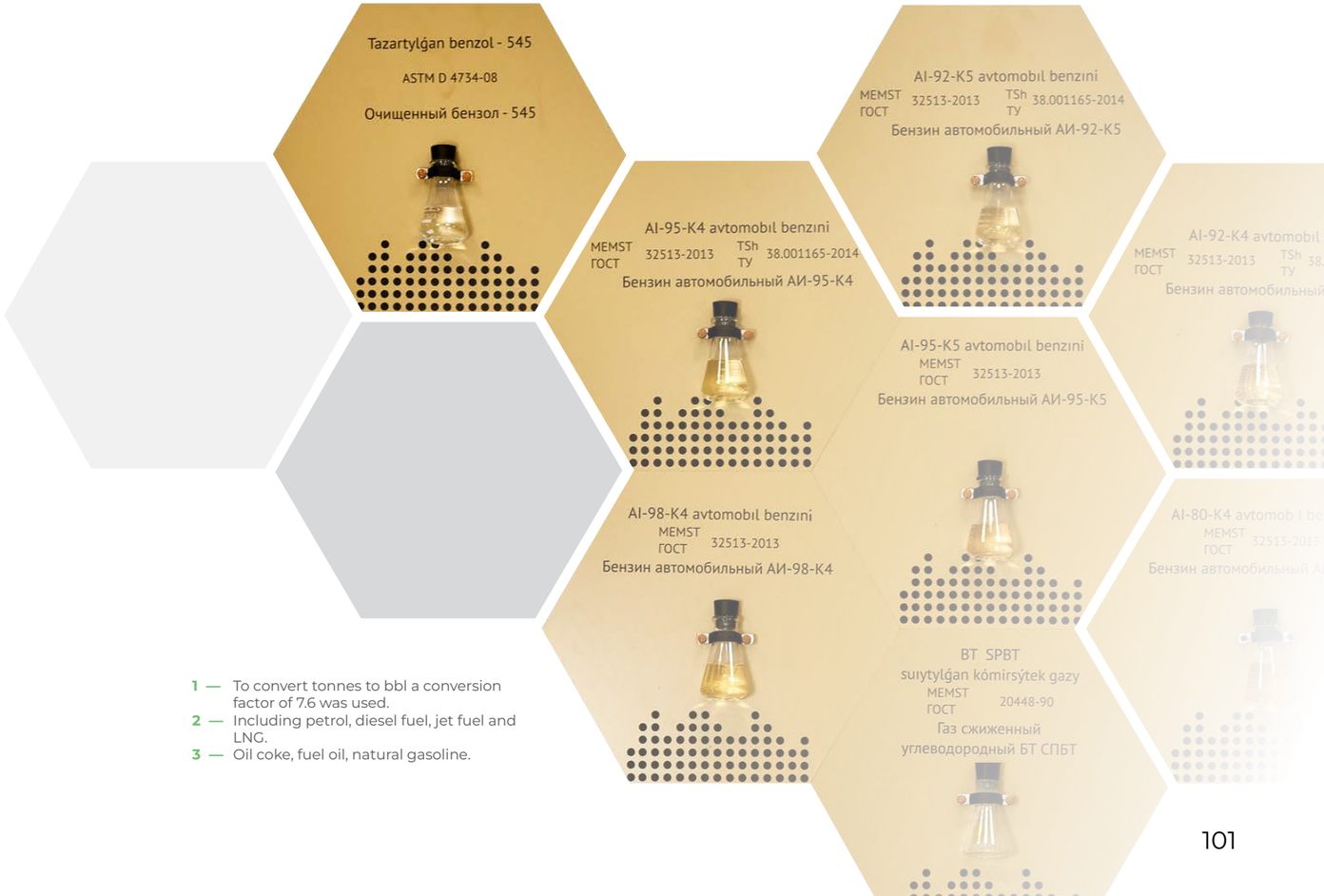
Refinery	2020	2021	2022
Petromidia Refinery	4,749	4,470	5,142
· Light[2]	4,009	3,590	4,075
· Dark[3]	575	530	889
· Other	165	152	178
Vega Refinery	361	320	370
· Dark	123	93	100
· Other	238	226	270
Total	**5,110**	**4,790**	**5,512**

Hydrocarbon refining volumes (net to KMG), thous. tonnes



	2020	2021	2022
Petromidia	4,864	4,586	5,258
Vega	364	321	373

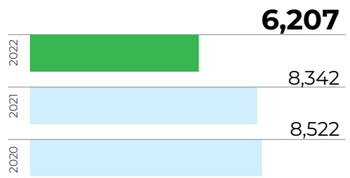
In 2022, Petromidia's refining margin calculated as the difference between Urals crude prices and oil product prices (petrol, diesel fuel, naphtha, liquefied gas, jet fuel, fuel oil, propylene, sulphur, and oil coke) amounted to USD 135 per bbl on the back of an unbalanced market structure resulting from the conflict in Ukraine and the events that ensued.



1 — To convert tonnes to bbl a conversion factor of 7.6 was used.
2 — Including petrol, diesel fuel, jet fuel and LNG.
3 — Oil coke, fuel oil, natural gasoline.

In 2022, crude oil volumes for resale marketed through KMG International's trading operations totalled 6.2 mln tonnes.

Crude oil for resale, thous. tonnes



KMG International's retail network

Romania's retail market is the most profitable market for KMG International's oil products.

To develop Romanian retail chain, in 2021 KMG's Investment Committee approved a project to build 44 new filling stations supported by the Kazakh-Romanian Investment Fund. 2022 saw the completion of eight stations on a major highway in Romania.

KMG International's share of the Romanian retail market in 2022 is estimated at 16.9%, up 0.6% year-on-year (16.3% in 2021 based on actual data).

At year-end 2022, KMG International's retail network was comprised of the following assets:

- Romania: 304 filling stations and 953 points of sale (DOEX, RBI, and Cuves). 8 CODO, 4 DODO, 19 DOEX, 2 new RBI, and 19 Cuves were opened;
- Neighbouring countries: 262 filling stations and points of sale, including 60 stations in Bulgaria, 105 stations in Georgia (8 stations added, while 19 stations were closed due to contract expiry) and 96 stations in Moldova (3 stations in rural regions were closed as loss-making).

Refinery development plans

With a historic focus on developing refining assets, while also given the previous years' market conditions and the Paris Agreement under the United Nations Framework Convention on Climate Change governing efforts to lower carbon dioxide concentrations in the atmosphere starting from 2020, a number of concerns arose with respect to the Group such as: 1) the Group's unbalanced asset portfolio and high exposure to refining margin volatility; 2) logistic limitations as investments in new refining capacities were not followed by the upgrade of logistics infrastructure to accommodate increased volumes; 3) a chain of filling stations disproportionate to increased production capacity.

Vertical integration, along with the accelerated intensive development of controlled sales channels in Romania and neighbouring countries, remain the key focus areas. Further refinery investments are to be limited to the previously approved projects, such as the conversion of a high-density polyethylene production unit into a polypropylene unit, while development projects must become part of KMG International's decarbonisation strategy.

New technologies, operational excellence and efficiency (case studies, results, future plans)

The Group has set about developing a decarbonisation strategy associated with the EU's commitment under the European Green Deal to reach climate neutrality by 2050. It has also continued to invest in asset integrity projects for Petromidia, Vega and the Petrochemical Complex in order to maintain their operational availability. The bulk of the projects focus on repairing and restoring the tank farm, ISCIR authorisation, as well as activities associated with the technological shutdown of 2022, with a greater emphasis on safety-related projects. Besides, due to the unusual market conditions and geopolitical landscape during 2022, we adapted and reacted according to the situation maximising fuel gas production and minimising steam costs.

New projects

CHP construction project: approved by KMG's Investment Committee on 16 March 2020, the project will provide all the necessary steam and electricity to Petromidia Refinery. Project progress update:

- completed design package: basic design, documentation to obtain construction permit for the CHP and natural gas pipeline; construction permit for the CHP and gas pipeline;
- equipment procurement: gas turbines, main and auxiliary transformers, other electric equipment;
- completed construction works: demolition of old buildings, foundations for all equipment, main control building, installation of transformers;
- ongoing construction works: main pipe racks, underground work, foundations for the natural gas pipeline, installation of gas turbines.

The 44 stations retail network construction project: KMG International's long-term strategy focuses on developing the retail segment by expanding on the Romanian market considered the most attractive for retail sales. The project's key mission is to increase the Company's share of the retail oil product market in Romania. KMG's Investment Committee approved the project on 4 November 2021. Project progress update:

- The new concept of highway filling stations was selected through a tender in 2021. As the highway is Romania's most important strategically-located transit route, a new state-of-the-art concept was developed to offer a larger store (up to 600 m2 compared to 240 m2 in the case of a standard filling station). The format features a restaurant and partnership with fast food operators, which will improve non-fuel profitability and image of the entire retail chain and the company as a whole. In 2023, six more highway sites have been won through a new open CNAIR tender to be approved and built during 2023.
- KMG International updated its annual filling station construction schedule planning to build 8/14/12/10 stations in 2022–2025 (compared to the original plan of building 16/16/12 stations in 2022–2024)
- In addition, as of year-end 2022: 1) land contracts have been signed for 19 sites in accordance with the permit, where 5 construction permits are expected to be obtained during 2023; 2) bidding is underway to acquire construction categories (services and equipment) for standard stations.

The Dolphin project for refineries is a programme to improve operational efficiency with a focus on continuous improvement, energy efficiency, maintenance, organisational efficiency, digitalisation, and process losses.