November 09, 2022

"KazMunayGas" NCJSC

RECOMMENDATION

Buy

KazMunayGas JSC

STOCK MARKET

Equity research | DCF

Kazakhstan | Oil and Gas

Upside potential: 52%
Target price: 12,800 KZT
Offering price: 8,406 KZT

Valuation report

KazMunayGas: oil rent for Kazakhstanis

Financial performance, billion KZT, 6M22

Revenue	**4,203**
Share in income of joint companies	**644**
Net profit	**677**
Free cash flow	**188**

Ratios, Indexes and Margin, 6M22

P/E, (x)	**4.1x**
EV/EBITDA, (x)	**3.5x**
P/B, (x)	**0.57x**
ROA, (%)	**4.6%**
ROE, (%)	**7.8%**
EBITDA margin, (%)	**24%**

IPO data

Shares issued (million shares)	**610**
Shares to be offered (million shares)	**30.5**
Offering price (KZT)	**8,406**
Capitalization (billion KZT)	**5,129**
Capitalization (million USD)	**10,904**
IPO value (billion KZT)	**256**
Ticker KASE	**KMGZ**
Ticker AIX	**KMG**
Investment horizon:	**6-12 months**

We have set our target price at KZT12,800 per share of KazMunayGas (the "Group"), which implies upside potential of 52% from the offering price. We assign a Buy rating to the stock.

KazMunayGas shares show good upside potential relative to our DCF valuation, reflecting our view of the Group's (1) important economic status, (2) strong oil and gas fundamental assets, and (3) operating performance growth prospects.

The most important national company. KazMunayGas is a vertically integrated oil and gas company engaged in oil exploration, production, transportation and refining. The Group has the status of a national company, which gives priority advantages in terms of subsoil use of oil and gas fields. Moreover, the oil and gas sector is the most important industry in Kazakhstan, which gives the Group a privileged position and allows it to rely on government support in the event of the most unfavorable scenarios.

Strong foundation of oil assets. The Group owns a large number of valuable oil and gas assets. The main ones in terms of oil production are Ozenmunaigas JSC and Embamunaigas JSC, in which the Group owns a 100% interest. The Group also owns interests in three mega-projects, whose total production is approximately 65% of oil production in Kazakhstan. These projects generate quite significant cash flows, have huge oil reserves and relatively low levels of lifting costs, which can support KazMunayGas in a low oil prices period. Moreover, the Group owns a relatively high level of proven and probable oil reserves, and exploration activities are continuously replenishing the Group's reserves. The sharp rise in oil prices this year will allow the Group to increase free cash flow and, most likely, increase dividends.

Growth prospects. The Group intends to further develop its traditional business lines in the field of hydrocarbon production. At the same time, the Group is launching new production in oil refining. In particular, this year it is planned to launch a polypropylene plant with a capacity of 500 thousand tons. And by 2026 and 2027, KazMunayGas plans to put into operation butadiene and polyethylene plants. Moreover, TCO is completing its expansion program and will increase oil production by approximately 45% over the next 2 years, which will significantly increase the Group's cash flows.

Orazbayev Daniyar
Investment Analyst
(+7) 727 311 10 64 (688) | orazbayev@ffin.kz

KazMunayGas: financial performance

Profit Statement, billion KZT	2019	2020	2021	6M22
Revenue	6,859	3,625	5,839	4,203
Share in income of joint companies	828	281	769	644
Other income	283	107	135	63
Total income	**7,970**	**4,013**	**6,743**	**4,910**
Cost of oil and oil products	(3,914)	(1,901)	(3,596)	(2,818)
Production costs	(722)	(656)	(693)	(482)
Other operating expenses	(1,634)	(1,119)	(1,131)	(591)
Financial expenses	(317)	(265)	(249)	(153)
Other expenses	1	(75)	(42)	(54)
Profit before taxes	**1,385**	**(4)**	**1,031**	**812**
Net profit	**1,158**	**172**	**1,162**	**677**
EBITDA	**1,354**	**589**	**872**	**524**

Upside and Margin, %	2019	2020	2021	6M22
Revenue growth	(2)%	(47)%	61%	57%
Growth in income from joint companies	19%	(66)%	174%	99%
EBITDA growth	18%	(74)%	171%	18%
EBITDA margin	16%	8%	13%	11%
Net profit margin	15%	(2)%	12%	14%

Cash Flow, billion KZT	2019	2020	2021	6M22
Cash flows from operating activities	**124**	**447**	**1 078**	**354**
Dividends from joint ventures	126	135	415	123
Cash flows from Investment activities	**(320)**	**(206)**	**(989)**	**(235)**
Capex	(444)	(396)	(410)	(166)
Cash flows from financing activities	**(270)**	**(245)**	**(283)**	**(177)**
Dividends paid	(37)	(82)	(50)	(200)
Cash flow	**(481)**	**81**	**(170)**	**(3)**
Free cash flow	**(320)**	**50**	**669**	**188**
Shares outstanding, million shares	610	610	610	610
Share Book Value, KZT	13,372	14,273	13,519	14,745
Share Market Value, KZT	-	-	-	8,406
Market capitalization, billion KZT	-	-	-	5,129
EV, billion KZT	-	-	-	9,032
Working capital, billion KZT	11	114	159	312
Reinvestment, billion KZT	282	499	454	239
BV, billion KZT	8,158	8,708	8,248	8,996
EPS, KZT per share	1,899	(147)	1,326	1,110

Balance sheet, billion KZT	2019	2020	2021	6M22
Receivables	398	423	418	834
Bank deposits	360	282	511	609
Loans to related parties	139	28	486	449
Cash	1,064	1,146	976	973
Other assets	672	551	715	639
Current assets	**2,632**	**2,430**	**3,106**	**3,505**
Fixed assets	4,484	4,370	3,406	3,497
Investments in joint companies	5,590	6,471	6,550	7,565
Other non-current assets	1,367	1,336	589	643
Non-current assets	**11,442**	**12,177**	**10,546**	**11,705**
Borrowings	253	362	485	356
Payables	668	537	519	870
Other current liabilities	517	435	368	499
Current liabilities	**1,438**	**1,333**	**1,372**	**1,725**
Borrowings	3,584	3,717	3,261	3,579
Reserves	274	303	223	226
Deferred tax	509	556	546	660
Other non-current liabilities	80	107	91	94
Non-current liabilities	**4,447**	**4,683**	**4,121**	**4,559**
Authorized capital	917	917	917	917
Translation reserve	1,732	2,146	2,261	2,691
Retained profit	5,469	5,637	5,060	5,415
Total equity	**8,158**	**8,708**	**8,248**	**8,996**

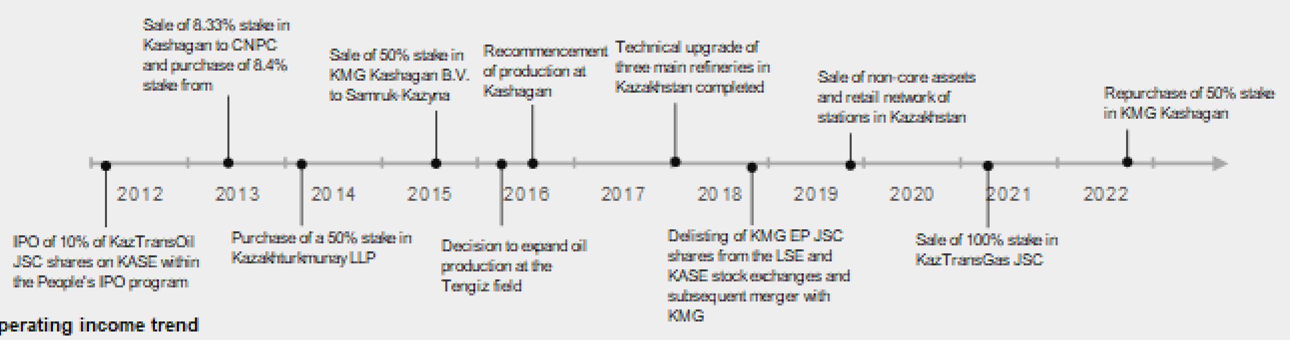
Debt and Equity	2019	2020	2021	6M22
EBIT/Interest Expense, (x)	5.3x	1.0x	5.2x	6.6x
Debt/Assets, %	27%	28%	27%	26%
Debt/Equity, %	47%	47%	46%	44%
Debt/Invest. capital, %	32%	32%	31%	30%
Equity/Assets, %	58%	59%	60%	59%

Multiples	2019	2020	2021	6M22
P/B	-	-	-	0.6x
P/E	-	-	-	4.1x
EV/EBITDA	-	-	-	3.5x
EV/S	-	-	-	1.1x

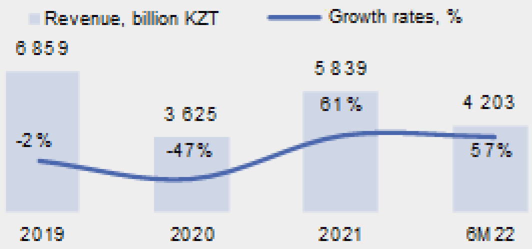
Source: Group data

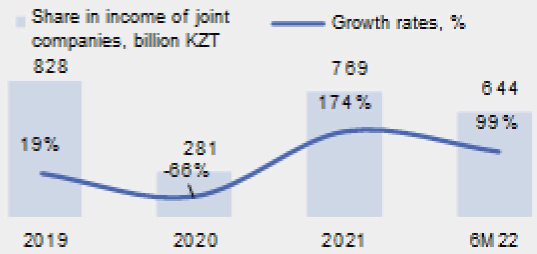
KazMunayGas: events and cost drivers

Key events of KazMunayGas since 2012

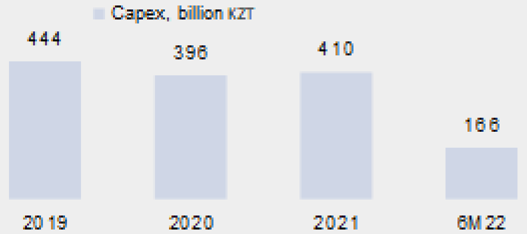


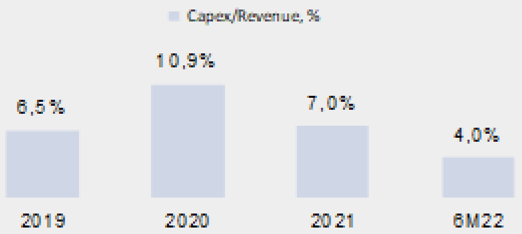
Operating income trend



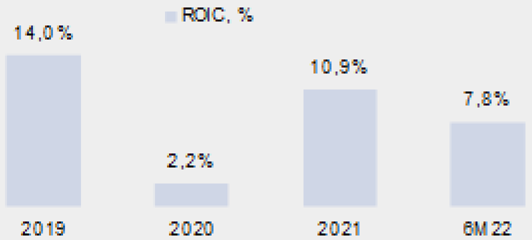


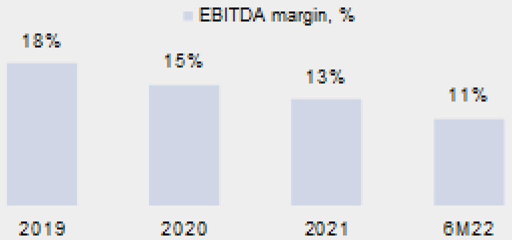
Capex



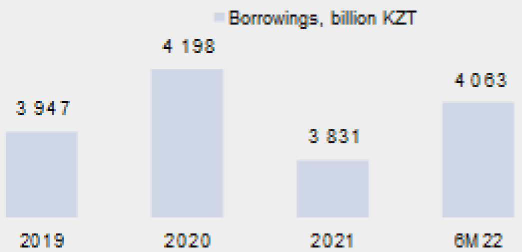


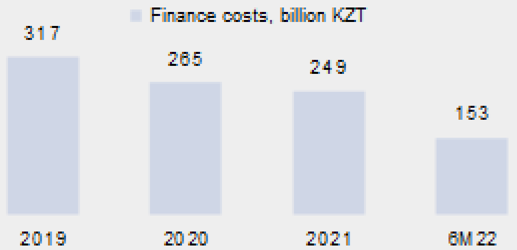
Margin and profitability





Borrowings and interest payments





Source: Group data

FREEDOM BROKER

Index of Contents

FREEDOM BROKER

KazMunayGas: history and general information

KazMunayGas NC JSC is the key national company of Kazakhstan operating in oil and gas. KMG NC JSC (the "Group") is the main vertically integrated oil and gas company in the Republic of Kazakhstan. The Group operates throughout the entire production cycle: oil exploration, production, transportation and refining, including services. The main assets of the Group are oil producing companies. The Group owns stakes in all major oil and gas fields in Kazakhstan, including such giants as Tengiz, Kashagan and Karachaganak. Moreover, it owns interests in three oil transportation companies. The Group also owns two major refineries in Kazakhstan, a majority interest in two refineries in Romania and a 50% interest in another major refinery in Kazakhstan.

The history of the Group amid stages of development of the industry. KazMunayGas NC JSC was established in 2002 by merging the "Kazakhoil" National Oil and Gas Company and the "Oil and Gas Transportation" National Company under the Decree of the President of the Republic of Kazakhstan dated February 20, 2002. In general, the oil and gas industry in Kazakhstan originated back in 1892, when oil exploration began at the Emba, now located in the Aktobe region. In 1911, a large deposit was discovered on the Dossor area, and two years later, a deposit was discovered in Makat. By 1914, 200,000 tons of oil had been produced from these fields. Two years earlier, Emba joint-stock company for the oil industry and trade issued shares on the London Stock Exchange to raise capital. Nevertheless, the official history of Embamunaigas JSC begins in 1922 with the creation of the Embaneft trust to develop the Dossor and Makat fields. By the end of 1940, oil production in the fields of the Ural-Emba region reached 750 thousand tons per year, and by the end of the decade, the figure had grown to 1 million tons per year. In 1945, the Guryev (Atyrau) oil refinery was put into operation on the basis of American equipment received under the Lend-Lease Program. In the 1960s, production began at the Uzen field, where the Group subsidiary, Ozenmunaigas, is now engaged in oil production. In the 1970s, such now important deposits as Kalamkas, Northern Buzachi and Karazhanbas were discovered. In 1979, the giant Tengiz field was discovered. After the disintegration of the USSR, separate oil producing enterprises were transformed into joint-stock companies in Kazakhstan. In 1993, the Kazakhoil and KazTransOil national companies were established. In the same year, a production sharing agreement was signed with foreign partners at the Karachaganak field. Also this year, Kazakhstan, Russia, Oman and the International Petroleum Consortium agreed on the construction of the CPC oil pipeline. In 2005, the Atasu-Alashankou oil pipeline was launched, through which oil is pumped to China. In the same year, the Group acquired an 8.33% stake in the Kashagan project. In 2006, the IPO of the subsidiary KazMunaiGas Exploration Production JSC took place on the LSE and KASE. Moreover, in 2006, a 50% stake in Kazgermunai JV LLP was purchased, and a 33% stake in the PetroKazakhstan Inc. group of companies. In 2007, the Group's list of acquisitions was replenished with a 75% stake in Rompetrol, a 50% stake in the Shymkent Oil Refinery and a 50% stake in Karazhanbasmunai JSC. In 2008, KazMunayGas doubled its stake in Kashagan to 16.81% after renegotiating the terms of the production sharing agreement. In 2009, the Asian gas pipeline was launched, through which gas exports to China began. In the same year, the Group increased its stake in Rompetrol to 100%, acquired the Pavlodar oil refinery and a 50% stake in MangistauMunayGas JSC. In 2011, the Group received a 10% stake in the Karachaganak field, and in 2012, as part of the People's IPO program, an IPO of KazTransOil took place on KASE. A year later, the Венеu-Bozoy-Shymkent gas pipeline was launched. In 2014, the stake in Kazakhturkmunay LLP was increased from 50% to 100%. In 2015, in order to reduce its leverage, the Group sold an 8.44% stake in the Kashagan project to Samruk-Kazyna JSC. In 2016, production was resumed at the Kashagan field and a decision was announced to expand oil production in Tengiz. In 2017-2018, the enhancement of three large refineries in Kazakhstan was completed. In 2017, the CPC throughput was increased to 67 million tons to meet the needs of Kashagan. In 2018, KMG EP shares were delisted and almost completely merged with the Group structure. In 2019, the Group sold various non-core assets, as well as a retail network of stations in Kazakhstan. And two years later, a 100% stake in KazTransGasAymak JSC was sold to Samruk-Kazyna JSC. Also, over the past two years, the Group has acquired a stake in Butadien LLP (24.9%) and Petrosun LLP (49%) to further expand the range of petroleum products.

Table 1. List of subsidiaries of the Group and their core activities as of June 30, 2022

Name	Core Activities	Country of Registration	Shareholding, %
KazMunaiGas Exploration Production JSC	Exploration and Production	Kazakhstan	99.72%
KazMunayTeniz LLP	Exploration and Production	Kazakhstan	100%
KMG Karachaganak LLP	Exploration and Production	Kazakhstan	100%
Kazakhturkmunay LLP	Exploration and Production	Kazakhstan	100%
KazTransOil JSC	Oil transportation	Kazakhstan	90%
Kazmortransflot LLP	Oil transportation and construction	Kazakhstan	100%
Cooperative KazMunayGas PKI U.A.	Processing and sale of petroleum products	Netherlands	100%
Atyrau Oil Refinery LLP	Processing	Kazakhstan	99.53%
Pavlodar Petrochemical Plant LLP	Processing	Kazakhstan	100%
KMG International N.V.	Processing and sale of petroleum products	Romania	100%
KMG Drilling&Services LLP	Drilling services	Kazakhstan	100%

Source: Group data

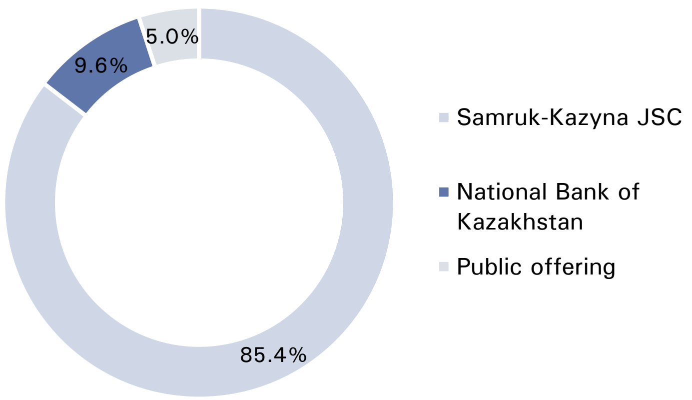
Table 2. List of joint ventures and associates of the Group and their core activities as of June 30, 2022

Name	Core Activities	Place of Business	Shareholding, %
Tengizchevroil LLP (TCO)	Exploration and Production of Hydrocarbons	Kazakhstan	20%
KMG Kashagan B V (Kashagan)	Exploration and Production of Hydrocarbons	Kazakhstan	50%
Mangystau Investment B V (MIBV)	Exploration and Production of Hydrocarbons	Kazakhstan	50%
KazRosGas LLP (KRG)	Processing and Sale of Natural Gas and Processed Products	Kazakhstan	50%
Ural Group Limited (UGL)	Exploration and Production of Hydrocarbons	Kazakhstan	50%
Kazgermunai LLP (KGM)	Exploration and Production of Hydrocarbons	Kazakhstan	50%
Kazakhoil-Aktobe LLP (KOA)	Exploration and Production of Hydrocarbons	Kazakhstan	49%
Teniz Service LLP (Teniz Service)	Design, Construction and Operation of Infrastructure Facilities, Support of Offshore Oil Operations	Kazakhstan	48.996%
Valsera Holdings B V (Valsera)	Crude Oil Processing	Kazakhstan	50%
Caspian Pipeline Consortium (CPC)	Transportation of Liquid Hydrocarbons	Kazakhstan /Russia	20.75%
PetroKazakhstan Inc. (PKI)	Exploration, Production and Processing of Hydrocarbons	Kazakhstan	33%

Source: Group data

Management, shares and the IPO structure. The Group will hold a local IPO on the Kazakhstan Stock Exchange (KASE) and the Astana International Exchange (AIX). Share ticker on KASE is KMGZ, on AIX - KMG. As part of the IPO, investors will be offered no more than 30.5 million ordinary shares at a price of KZT 8,406 per share. As a result, the IPO value will be amounted to KZT256 billion, or a 5% stake in the Group. The market capitalization will be KZT5.1 trillion. The subscription will begin on November 09, 2022 and end on December 02, 2022. Samruk-Kazyna JSC will be the seller of these shares. As of June 30, 2022, the total number of ordinary shares of KazMunayGas JSC is 610,119,493. 90.42% of the shares are owned by Samruk-Kazyna JSC, which, in turn, is owned by the Government of the Republic of Kazakhstan, and the remaining 9.58% is owned by the National Bank of the Republic of Kazakhstan. The Chairman of the Management Board of the Group is Mr. Magzum Myrzagaliev, and the Chairman of the Board of Directors is Chris Walton.

Graph 1. Post-IPO Group ownership structure



Source: Group data

Dividend Policy. In accordance with its dividend policy, the Group intends to pay out up to 50% of free cash flow as dividends. In the decision on payments, the key determinant is the level of leverage measured as the net debt-to-adjusted EBITDA ratio. The adjusted EBITDA is revenue plus dividends received from joint ventures and associates minus the cost of purchased oil, gas, petroleum products and other materials (except depreciation and amortization) minus operating expenses minus general and administrative expenses (except depreciation and amortization) minus expenses for transportation and sale (except depreciation and amortization) minus taxes other than income tax. If net debt/EBITDA is less than 1.0x, at least 50% of free cash flow will be paid out. If net debt/EBITDA is 1.0-1.5x, at least 40% of free cash flow will be paid out, and at 1.5x-2.0x, at least 30% of free cash flow will be paid out. If the leverage exceeds 2.0x, the percentage of payment will be determined by resolution of the general meeting of shareholders. In addition, the Group will pay at least KZT 200 billion of annual guaranteed dividends over the next three years if the average annual oil price will be at least $70 per barrel. In 2021, the Group paid KZT 200 billion of dividends, or 30% of free cash flow, and in 2020, the payment amounted to KZT 50 billion, or 100% of free cash flow.

Table 3. Dividend payments by the Group from FY2015 to FY2021

	2015	2016	2017	2018	2019	2020	2021
Dividends paid at the end of the specified year, billion KZT	**59.7**	**6.7**	**36.3**	**37.0**	**-**	**50.0**	**200**
Dividends per share, KZT	102	11.3	61.5	60.6-		82.0	328
% of net profit	12%	1.9%	6.9%	5%	0.0%	29%	17%
% of free cash flow	-15%	0.8%	16%	19%	0.0%	100%	30%
Dividends paid by joint companies in the specified year, billion KZT	**173**	**119**	**272**	**160**	**126**	**135**	**415**

Source: Group data, Freedom Finance calculation

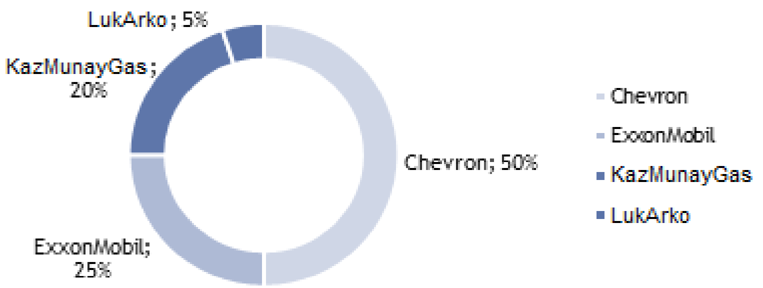
Overview of KazMunayGas operations

The Group divides its operations into three main segments: Exploration and Production, Transportation and Refining. In the Exploration and Production segment, the Group operates in the exploration and production of oil and gas. This is the main segment that brings in the largest share of net profit. The Group has interests in many potential and existing subsoil user projects. Transportation is a segment that includes three oil transportation companies to various export and domestic destinations. One of them carries out a water transportation. The Refining segment consists of 5 refineries and another company that refine crude oil and produce petroleum products such as gasoline, diesel fuel, aviation kerosene and bitumen.

Exploration and Production. The Group has the largest number of subsidiaries, joint ventures and associates in this segment. In general, oil and gas production is represented by 13 companies where KMG owns various interest. These companies are also divided into two categories: Operating Assets and Megaprojects. The latter are three giant fields: Tengiz, Kashagan and Karachaganak. All other smaller assets are classified as operating assets.

The Tengiz field was discovered in 1979, and large-scale oil production began in 1993 by Tengizchevroil (TCO), in which the Group owns a 20% stake. The main shareholder of the TCO is the American company Chevron with a 50% stake. The field is one of the largest in the world, and 31% of oil production in Kazakhstan falls on Tengiz. It is also the deepest field among the active super-giants. The total oil and gas reserves are 8.3 billion barrels of oil equivalent. In 2023, oil production is expected to grow by about 45% upon completion of the expansion project. Its total cost was approximately $46.5 billion.

Graph 2. Tengizchevroil LLP Shareholding as of June 30, 2022

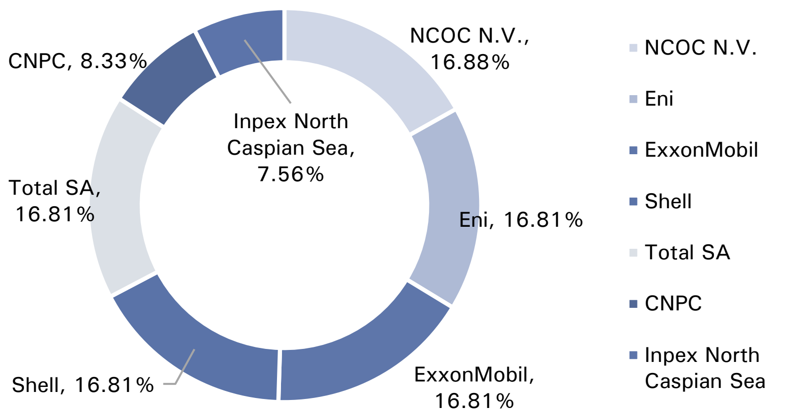


Source: Group data

Oil production started at the Kashagan offshore field in 2016. It is the first major offshore project in Kazakhstan, and production is carried out on five artificial islands. The total 2P (proven and probable) hydrocarbon reserves of the super-giant are 16.2 billion barrels of oil equivalent, which allows oil production for more than 120 years at the current level of production. The operator is North Caspian Operating Company B.V. (NCOC), in which the shareholders are: NCOC N.V., Eni, ExxonMobil, Shell, Total SA, CNPC and Inpex North Caspian Sea. Moreover, KMG recently owns a 100% stake in KMG Kashagan B.V., which is the beneficiary of NCOC N.V. owning a 16.877% stake in Kashagan. In October 2015, the Group sold a 50% stake in KMG Kashagan B.V. to Samruk-Kazyna Fund for $4.7 billion, but retaining a re-purchase option with exercise in 2018-2020. Then it was extended until the end of

2022. The main purpose of the sale was to reduce the leverage amid falling oil prices and the lack of incoming cash flows from the project. As a result, on September 15, 2022, the Group exercised the option and re-purchase the stake for $3.8 billion partially through debt financing, mutual settlements of Samruk-Kazyna's previous debts to the Group and future cash flows from the sale of the Kashagan field's oil.

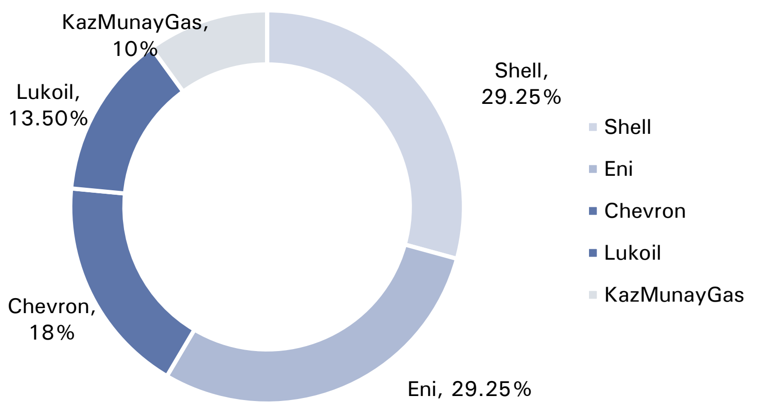
Graph 3. North Caspian Operating Company B.V. Shareholding as of June 30, 2022



Source: Group data

Karachaganak is one of the largest gas condensate fields in the world. It was launched in 1984, and the field accounts for almost 12% of all hydrocarbon production in Kazakhstan. The total oil and gas reserves are approximately 4.9 billion barrels of oil equivalent. The operator is Karachaganak Petroleum Operating B.V. (KPO), in which the following companies are shareholders: Shell, Eni, Chevron, Lukoil and KazMunayGas through KMG Karachaganak B.V.

Graph 4. Karachaganak Petroleum Operating B.V. Shareholding as of June 30, 2022



Source: Group data

Among the operating assets, three most important companies should be highlighted: Ozenmunaigas JSC, Embamunaigas JSC and Mangistaumunaigaz JSC. Ozenmunaigas is the largest among KMG's subsidiaries. The Uzen field has been active since 1965, and the proven oil and gas reserves are 698 million barrels of oil equivalent. Embamunaigas, in turn, is the oldest operating oil and gas asset, operating since 1911. EMG's proven hydrocarbon reserves are 286 barrels of oil equivalent. Mangistaumunaigaz is a joint venture of the Group together with China's CNPC (50% stake each). The field has been operating since 1967, and proven and probable oil and gas reserves in proportion to KMG's share are amounted to 327 million barrels of oil equivalent. The total proven and probable hydrocarbon reserves of KazMunayGas in all fields at the end of 2021 are amounted to 4.98 billion barrels of oil equivalent, or 645 million tons of oil equivalent.

Table 4. Hydrocarbon reserves for all KMG fields as of December 31, 2021

Group hydrocarbon reserves	Oil, million tons, share of KMG	Oil, million tons, 100%	Gas, bcm, share of KMG	Gas, bcm, 100%
Operating assets				
Ozenmunaigas JSC (100%)	95	95	-	-
Embamunaigas JSC (100%)	39	39	1.2	1.2
Karazhanbasmunai JSC (50%)	19	38	-	-
JV Kazgermunai LLP (50%)	7.2	14	1.4	2.8
PetroKazakhstan Inc. (33%)	0.4	1.2	-	-
Amangeldy Gas LLP (condensate) (100%)	-.	-	-	-
Mangistaumunaigaz JSC (50%)	43	86	3.6	7.2
KazakhoilAktobe LLP (50%)	6.3	13	2.9	5.8
Kazakhturkmunay LLP (100%)	3.0	3.0	-	-
Urikhtau Operating LLP (100%)	3.1	3.1	14.9	14.9
Total operating assets	**216.1**	**292.7**	**24.0**	**31.9**
Megaprojects				
Tengiz (20%)	135	673	52	262
Kashagan (16.88%)	257	1,520	11	66
Karachaganak (10%)	23	227	32	320
Total megaprojects	**414**	**2,420**	**96**	**648**
GRAND TOTAL	**630**	**2,713**	**120**	**680**

Source: Group data

The total volume of oil production *pro rata* the KMG ownership share amounted to 10.78 million tons in the 1H2022. This figure was only 40,000 tons higher than last year. 63% of oil produced came from operating assets, while the remaining 37% came from megaprojects. Their share in oil production increases every year amid the launch of the Kashagan field and a gradual increase in production. At Kashagan, production increased from 8.1 million tons in 2017 to 15.9 million tons in 2021. However, in the first 6 months of 2022, production at the field amounted to only 7.1 million tons (-2% YoY). At the same time, in Tengiz, production increased by 6% YoY due to a lower base in 2021, when oil production in Kazakhstan was limited by the OPEC+ agreement. Also, over the past few years, there has been a slow and gradual decline in production levels at some old fields. If 10 operating assets of the Group accounted for 16.2 million tons of oil production in 2015, then the figure fell to 14 million tons in 2021. The main drop fell on the PetroKazakhstan Inc. and Kazgermunai, which produce oil in the Kyzylorda region, where the Kumkol field has been steadily depleted, and the overall decline in production since 2015 was 59% and 52%, respectively. Year on year, the main 100% subsidiary assets of KMG represented by Ozenmunaigas and Embamunaigas show stable dynamics of oil production at the level of 5.5 and 2.8 million tons of oil per year.

The decline in 2020-2021 was due to OPEC+ restrictions. The same stable dynamics can be noted for another major asset - Mangistaumunaigaz, whose production in 2015-2019 was at the level of 6.4 million tons per year and with a subsequent slight decrease in 2020.

Table 5. Oil production *pro rata* KMG share for 2015 - 6M2022, thousand tons

Oil production, thousand tons	2015	2016	2017	2018	2019	2020	2021	6M22	6M21
Operating assets									
Ozenmunaigas JSC (100%)	5,520	5,564	5,488	5,488	5,586	5,347	5,332	2,501	1,250
Embamunaigas JSC (100%)	2,823	2,832	2,840	2,895	2,900	2,601	2,522	1,267	627
Karazhanbasmunai JSC (50%)	1,069	1,064	1,071	1,081	1,082	1,001	1,048	529	260
JV Kazgermunai LLP (50%)	1,500	1,468	1,400	1,354	1,114	778	727	333	169
PetroKazakhstan Inc. (33%)	1,448	1,235	1,077	998	844	661	600	275	138
Amangeldy Gas LLP (condensate) (100%)	19	21	21	19	17	15	11	-	-
Mangistaumunaigaz JSC (50%)	3,137	3,145	3,178	3,187	3,204	2,977	2,944	1,474	720
KazakhoilAktobe LLP (50%)	401	381	351	296	320	295	298	140	70
Kazakhturkmunay LLP (100%)	242	292	387	376	409	432	434	216	110
Urikhtau Operating LLP (100%)	-	-	-	-	-	6	47	22	11
Total operating assets	**16,158**	**16,002**	**15,812**	**15,693**	**15,476**	**14,113**	**13,963**	**6,757**	**3,356**
Megaprojects									
Tengiz (20%)	5,432	5,511	5,739	5,724	5,958	5,292	5,311	2,867	1,457
Kashagan (16.88%)	-	79	686	1,094	1,169	1,253	1,344	601	386
Karachaganak (10%)	1,080	1,047	1,125	1,095	1,015	1,094	1,034	549	285
Total megaprojects	**6,511**	**6,637**	**7,550**	**7,913**	**8,142**	**7,639**	**7,688**	**4,017**	**2,128**
GRAND TOTAL	**22,669**	**22,639**	**23,362**	**23,606**	**23,618**	**21,752**	**21,651**	**10,774**	**5,484**

Source: Group data

Generally, gas production trend follows oil production. In the first six months of 2022, gas production amounted to 4.11 bcm. The leader in gas production is the Karachaganak field, where a total of almost 19 bcm of natural and oil-well gas was produced in 2021, ahead of Tengiz with 14.8 bcm.

Table 6. Gas production *pro rata* KMG share for 2015 - 6M2022, bcm

Gas production, bcm	2015	2016	2017	2018	2019	2020	2021	6M22	6M21
Operating assets									
Ozenmunaigas JSC (100%)	637	614	618	630	709	726	665	307	327
Embamunaigas JSC (100%)	188	191	198	221	260	217	202	110	89
Karazhanbasmunai JSC (50%)	342	19	18	22	27	27	31	16	17
JV Kazgermunai LLP (50%)	242	299	280	262	224	188	185	61	107
PetroKazakhstan Inc. (33%)	233	242	218	195	181	142	125	57	71
Amangeldy Gas LLP (condensate) (100%)	300	327	344	349	350	326	224	-	142
Mangistaumunaigaz JSC (50%)	366	378	378	393	394	334	376	213	176
KazakhoilAktobe LLP (50%)	302	308	301	249	348	361	412	213	191
Kazakhturkmunay LLP (100%)	165	187	175	161	143	140	167	102	66
Urikhtau Operating LLP (100%)	-	-	-	-	-	2	24	10	10
Total operating assets	**2,776**	**2,564**	**2,530**	**2,483**	**2,636**	**2,463**	**2,411**	**1,088**	**1,196**
Megaprojects									

Gas production, bcm	2015	2016	2017	2018	2019	2020	2021	6M22	6M21
Tengiz (20%)	2,978	3,016	3,172	3,125	3,258	2,950	2,953	1,599	1,505
Kashagan (16.88%)	-	49	397	637	700	758	818	372	374
Karachaganak (10%)	1,823	1,766	1,892	1,891	1,861	2,021	1,898	1,051	1,003
Total megaprojects	**4,801**	**4,831**	**5,462**	**5,653**	**5,819**	**5,729**	**5,669**	**3,022**	**2,883**
GRAND TOTAL	**7,577**	**7,395**	**7,992**	**8,137**	**8,455**	**8,191**	**8,081**	**4,110**	**4,079**

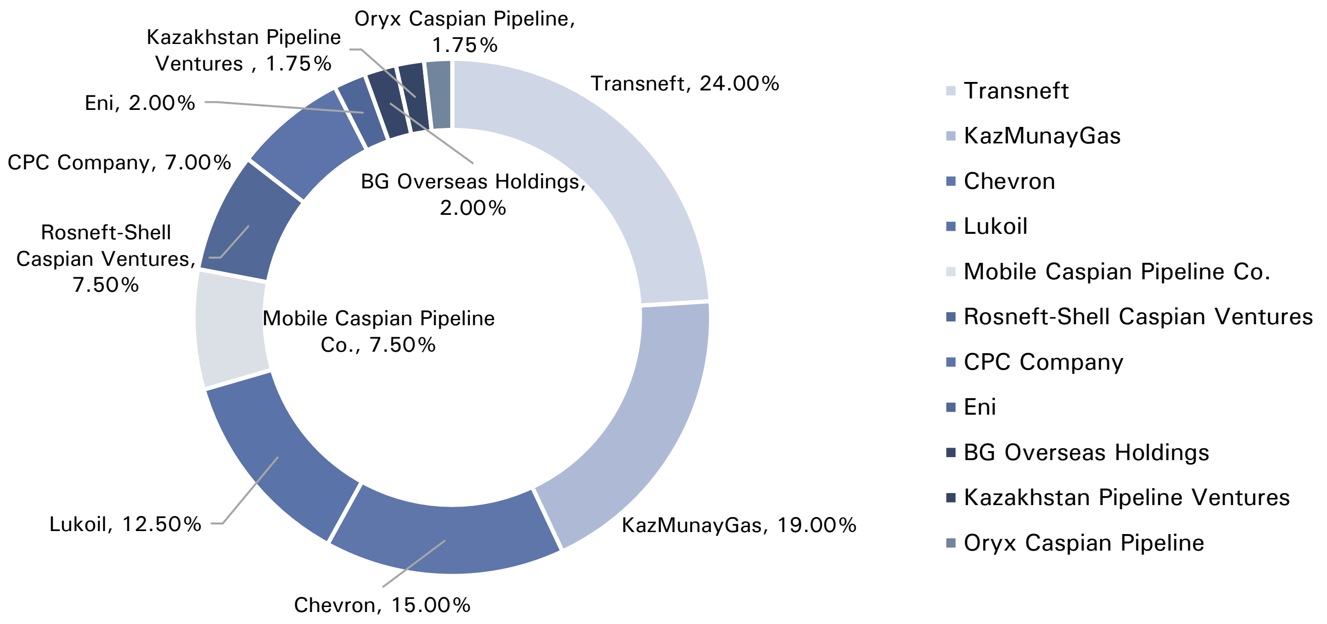
Source: Group data

Exploration of oil and gas fields and continuous replenishment of hydrocarbon reserves is one of the key tasks of the Group. The main focus of exploration is on the Caspian region, where approximately 90% of Kazakhstan's oil reserves are concentrated. In 2021, the Group received new licenses for two projects: Al-Farabi and Turgai. In 2020, the Group drilled 19 exploration wells and plans to drill 17 more wells in 2022. In general, it is planned to drill 42 prospecting and appraisal wells from 2023 to 2027. Also, a two-dimensional seismic survey will be carried out on an area of 9.3 thousand km^2 and a three-dimensional seismic survey on an area of 1.6 thousand km^2 during this period.

Transportation. In the transportation segment, the Group is represented through shareholding in three companies: Caspian Pipeline Consortium (CPC), KazTransOil (KTO) and Kazmortransflot (KMTF). Also through KTO, the Group owns the following companies: Kazakhstan-China Pipeline (KCP), Munaitas and Batumi oil terminal. All these companies are engaged in the transportation of oil to export and domestic destinations. KazTransOil is the national operator of the main oil pipeline. KazMunayGas owns 90% of KTO shares, the remaining 10% of the shares are public and traded on KASE after the IPO in 2012. The total length of main oil pipelines is almost 5.4 thousand km. The main export oil pipeline is Atyrau-Samara (throughput is up to 20 million tons/year), with further oil transportation to the Baltic Sea. The company is also engaged in pumping oil to the domestic market in order to produce oil products at refineries in Kazakhstan. The structure of KTO also includes joint companies: Munaitas and KKT, which own separate oil pipelines. Munaitas (KTO's stake is 51%) is the operator of the Kenkiyak-Atyrau oil pipeline (capacity is 6 million tons/year), which allows pumping oil from the Caspian region towards the Shymkent refinery and China, and also allows pumping oil from Aktobe fields to western export directions. The Kazakhstan-China Pipeline (KTO's stake is 50%) is the operator of two oil pipelines: Kenkiyak-Kumkol (throughput is 9.2 million tons/year) and Atasu-Alashankou (throughput is 20 million tons/year). These oil pipelines allow the transportation of oil from the west of the country towards China and the Shymkent refinery. In addition to these joint companies, KTO has a subsidiary, Batumi Oil Terminal LLC, which in turn owns the exclusive rights to the Batumi Seaport. This enterprise transships oil and oil products from the Caucasus, Kazakhstan and Central Asia on the Black Sea coast. The Caspian Pipeline Consortium is the operator of Kazakhstan's main export oil pipeline: Tengiz-Novorossiysk. About 80% of all exported oil is pumped through the CPC. Most of the oil comes from giant fields: Tengiz, Kashagan and Karachaganak. The pipeline also transports approximately 10% of Russian oil. The pipeline is 1,510 km long and has a throughput capacity of 67 million tons per year, with a further increase due to the upcoming increase in production at the Tengiz field. Upon reaching Novorossiysk, oil is sent to consumers by tankers by sea. The consortium includes the following companies: Transneft, KMG, Chevron, Lukoil, Mobile Caspian Pipeline Co., Rosneft-Shell Caspian Ventures, CPC Company, Eni, BG Overseas Holdings, Kazakhstan Pipeline Ventures and Oryx Caspian

Pipeline. The Group owns a 20.75% stake: 19% directly and 1.75% through Kazakhstan Pipeline Ventures.

Graph 5. Shareholding of the Caspian Pipeline Consortium as of June 30, 2022



Group data

NMSC Kazmortransflot LLP (KMTF) is the national maritime carrier and has a fleet of 3 oil tankers with a gross carrying capacity of 12,000 tons, 2 Aframax oil tankers with a carrying capacity of 115,000 tons, 8 barges and a dedicated fleet to support the expansion project TCO. The main activity is the transportation of oil in the direction to and beyond the Black Sea. The company is also engaged in the transportation of oil from the port of Aktau to Makhachkala and container transportation. The Group owns a 100% interest in KMTF.

In total, the Group transported 32.5 million tons of oil through oil pipelines in the first six months of 2022 (+2% YoY). Most of this figure falls on KazTransOil, whose oil transportation reached almost 20 million tons, or 61% of the total volume. However, the share of CTO has been declined in recent years. So, it was 72% in 2015. The decline was largely due to the launch of Kashagan and the transportation of its oil through the CPC. In parallel, there is a decrease in the volumes of pumping of KTO amid a decrease in production at the fields in the Kyzylorda region and OPEC + restrictions. Moreover, the volume of pumping through the Atyrau-Samara export pipeline decreased significantly in 2022 due to the increased discount of Urals oil, which made this direction unprofitable for oil producing companies. In CPC, on the contrary, there is a significant increase in transportation volumes due to the launch of Kashagan. In the 1H2022, the increase in CPC volumes was 1.4% YoY, despite the March shutdown of two of the three TLUs due to a severe storm and a June shutdown for 10 days due to work to detect explosive ordnance in the Black Sea. But amid these problems, the volumes of pumping through CCP (+16% YoY) and Munaitas (+37% YoY) in the direction of China increased significantly in 2022. Nevertheless, the throughput capacity of this route does not allow to fully replace CPC volumes. In addition, due to the problems of the CPC, as well as amid the start of hostilities in the Black Sea, the volume of oil transportation by KMTF decreased by 11%.

Table 7. Operating performance of the transportation segment for 2015 - 6M2022, thousand tons

Oil transportation, thousand tons	2015	2016	2017	2018	2019	2020	2021	6M22	6M21
KazTransOil JSC	47,541	43,797	46,293	45,309	44,463	42,298	41,224	19,959	20,428
Kazakhstan-China Pipeline LLP	7,935	7,045	8,269	7,999	8,100	7,942	8,706	4,864	4,211
MunaiTas JSC	1,909	2,356	1,867	1,978	1,648	1,694	2,179	1,337	979
Caspian Pipeline Consortium	8,873	9,192	11,435	12,675	13,125	12,248	12,601	6,325	6,236
TOTAL oil pipelines	**66,258**	**62,390**	**67,864**	**67,961**	**67,336**	**64,181**	**64,710**	**32,485**	**31,854**
Batumi Oil Terminal LLC	3,616	3,377	2,109	1,030	847	1,051	1,324	1,053	726
KMTF: Caspian Sea	2,724	2,875	2,480	2,738	543	629	537	294	136
KMTF: High Seas (Black, Mediterranean)	4,308	4,206	4,471	4,339	10,186	8,361	9,318	4,379	2,133
TOTAL	**76,906**	**72,848**	**76,924**	**76,067**	**78,912**	**74,222**	**75,889**	**38,211**	**34,849**

Group data

Refining. Oil refining is carried out by 6 companies that are part of the Group. 4 of these are located in Kazakhstan: Atyrau Oil Refinery (AOR, stake is 99.53%), Pavlodar Oil Chemistry Refinery LLP (POCR, stake is 100%), PetroKazakhstan Oil Products LLP (Shymkent Oil Refinery, PKOP, stake is 50%) and CaspiBitum (stake is 50%). The Group also holds a 54.63% interest through KMG International in two refineries operating in Romania: Petromidia and Vega.

The Pavlodar Oil Chemistry Refinery (POCR) was built in 1978 and is located on the Omsk-Pavlodar-Shymkent oil pipeline. The POCR is the largest and most technically equipped refinery in Kazakhstan. The production capacity of oil refining is 6 million tons per year. The main source of raw materials are the West Siberian deposits of the Russian Federation. The plant has catalytic cracking and a sulfur granulation unit. The technical upgrade of the plant was completed in December 2017 at a cost of $896 million. After the technical upgrade of the refinery, it began producing Euro-5 gasoline, and the refining depth increased to 87%. The plant also plans to start producing 100,000 tons of liquefied petroleum gas per year from 2023 and 160,000 tons of winter grade diesel from 2024.

Table 8. Production of petroleum products at the POCR for 2019 - 6M2022

Petroleum products produced by the POCR, thousand tons	2019	2020	2021	6M22
Petrol	1,366	1,431	1,527	833
Diesel fuel	1,759	1,605	1,719	934
Aviation kerosene	195	113	171	109
Residual fuel	592	538	557	333
Other products	882	923	962	480
TOTAL	**4,794**	**4,610**	**4,935**	**2,689**

Source: Group data

Atyrau Oil Refinery is the oldest oil refinery in Kazakhstan. It was launched in 1945 and has an oil refining capacity of 5.5 million tons per year. The technical upgrade of the Atyrau refinery was also completed in December 2017. Its total cost amounted to KZT 782 billion. This made it possible to start production of 132 thousand tons of benzene and 497 thousand tons of paraxylene per year. Also, the production of gasoline of Euro-4 and Euro-5 standards began, and the depth of refining increased to 86%.

Table 9. Production of petroleum products at the AOR for 2019 - 6M2022

Petroleum products produced by the AOR, thousand tons	2019	2020	2021
Petrol	1,231	1,054	1,362
Diesel fuel	1,536	1,472	1,560
Aviation kerosene	103	84	120
Residual fuel	1,240	1,064	1,173
Other products	781	851	652
TOTAL	**4,891**	**4,525**	**4,867**

Source: Group data

Shymkent Oil Refinery (PKOP) was launched in 1985. The Group's owns 50% stake through Valsera Holdings B.V. The designed annual oil refining capacity is 6 million tons, but the real figure was 5.2 million tons per year. Crude oil is supplied to the PKOP by the Group's joint companies and is processed on a tolling basis, i.e. it is not the property of the Group. The technical upgrade of the plant was fully completed in September 2018, which made it possible to produce gasoline of Euro-4 and Euro-5 standards and increase refining capacity.

Table 10. Production of petroleum products at the PKOP for 2019 – 2021

Petroleum products produced by the PKOP, thousand tons	2019	2020	2021
Petrol	1,908	1,958	1,900
Diesel fuel	1,518	1,411	1,551
Aviation kerosene	335	244	296
Residual fuel	659	343	627
Other products	535	333	329
TOTAL	**4,955**	**4,290**	**4,704**

Source: Group data

KMG International is a subsidiary of the Group, which owns a 54.63% stake in the Romanian refineries Petromidia and Vega. The Petromidia refinery was built in 1979 and is the largest refinery in Romania. The plant refining capacity is 5.6 million tons of oil per year and can process oil with a high sulfur content and high density. The refinery's petroleum products comply with all European standards and are exported to such countries as Ukraine, Moldova, Bulgaria, Turkey and others.

Table 11. Production of petroleum products at Petromidia for 2019 – 2021

Petroleum products produced by Petromidia, thousand tons	2019	2020	2021
Petrol	1,610	1,128	1,102
Diesel fuel	2,926	2,520	2,332
Aviation kerosene	406	139	156
Residual fuel	190	156	146
Other products	1,040	806	734
TOTAL	**6,172**	**4,749**	**4,470**

Source: Group data

The Vega refinery, in turn, is a small oil refinery with an annual capacity of 300,000 tons. The plant mainly uses Petromidia by-products to produce alternative types of raw materials (naphtha, C5 C6 fractions, residual fuel, etc.).

In the 1H2022, the total volume of crude oil refining pro rata the Group's share amounted to 9.7 million tons (+0.2% YoY). Almost 75% of this volume is accounted for by Kazakhstan refineries. In recent years, the share of local refineries has grown from 70% to 75% after the technical upgrade of three refineries, the launch of a bitumen plant and a decrease in refining volumes at Romanian refineries in 2020 and 2021. Upon completion of the technical upgrade, the volumes of oil refining by the three refineries increased from 14 to 16 million tons. At the same time, despite a decline in refining volumes at the Petromidia refinery this year due to scheduled repairs from March 11 to April 3, a 37% increase in PKOP volumes offset such decline. However, this dramatic increase came at the expense of a low base: a month-long overhaul in June 2021. In general, despite the stable trend of the total production volume, there is an increase in gasoline production, which reached 4.8 million tons in 2021. The growth was due to an increase in gasoline production at POCR and AOR.

Table 12. Group's oil refining trend in 2015 – 6M2022

Oil refining, thousand tons	2015	2016	2017	2018	2019	2020	2021	6M22	6M21
AOR (100%)	4,868	4,761	4,724	5,268	5,388	5,016	5,473	2,681	2,587
POCR (100%)	4,810	4,590	4,747	5,340	5,290	5,004	5,407	2,839	2,876
PKOP (50%)	2,247	2,251	2,343	2,366	2,701	2,397	2,582	1,518	1,105
CaspiBitum (50%)	188	312	359	409	443	433	464	211	222
Total Republic of Kazakhstan	**12,112**	**11,913**	**12,172**	**13,384**	**13,822**	**12,849**	**13,927**	**7,249**	**6,790**
Petromidia (100%)	4,950	5,408	5,662	5,925	6,331	4,864	4,586	2,310	2,726
Vega (100%)	329	354	373	406	436	364	321	163	188
Total KMG International	**5,278**	**5,762**	**6,035**	**6,331**	**6,767**	**5,228**	**4,907**	**2,473**	**2,914**
GRAND TOTAL	**17,391**	**17,675**	**18,208**	**19,715**	**20,588**	**18,077**	**18,833**	**9,722**	**9,704**

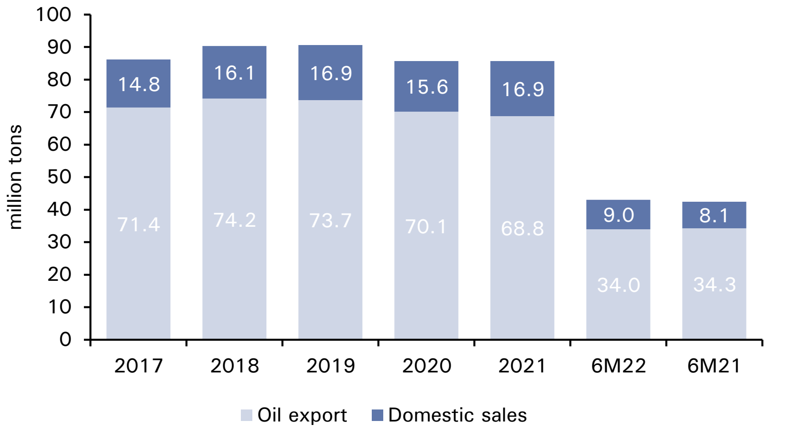
Group data

Summary of the situation in the oil and gas industry

The Kazakhstani oil and gas market is quite homogeneous, as KazMunayGas is a national and vertically integrated company with a stake in all key oil and gas fields, transport and refinery companies.

In 2021, Kazakhstan produced 85.7 million tons of oil, which is the same as in 2020. In 2020, there was a decrease of 5.4% due to restrictions under the OPEC+ agreement because of the COVID-19 pandemic. Also, oil consumption in the domestic market decreased amid that fact, as demand for oil products fell due to quarantine measures. In 2021, the consumption of crude oil by Kazakh refineries recovered and amounted to 16.9 million tons. At the same time, probably due to increased consumption by local refineries, oil exports decreased by 1.9% YoY. In the 1H2022, Kazakhstan produced 43 million tons of oil, which is 1.4% more than last year. However, exports slightly decreased amid the CPC problems and a sharp increase in the Urals discount, which made oil exports through the KazTransOil system unprofitable.

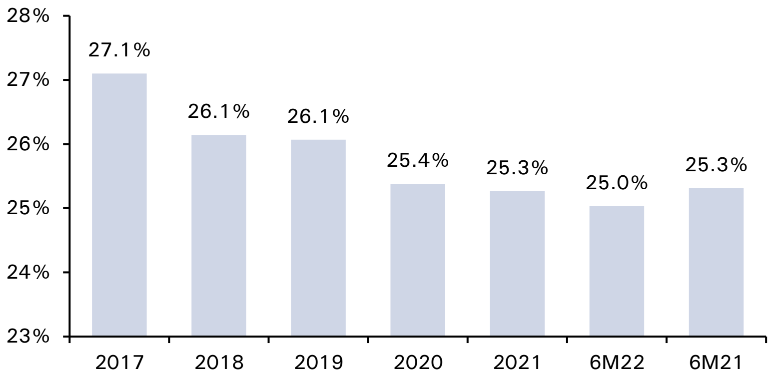
Graph 6. Oil export and Kazakhstan domestic sales trend for 2017 - 6M2022, million tons



Source: Group data

In 2021, the share of KazMunayGas in the oil production of Kazakhstan amounted to 25.3%, and in the 1H2022 to 25%. In general, there is a gradual decrease in the Group's share in total oil production. The reasons for this are a decrease in oil production from operating assets, where the Group has a high share and an increase in production from Kashagan and a share of 8.44%. However, after the repurchase of a 50% stake in KMG Kashagan B.V., an increase in the Group's share in total oil production can be expected.

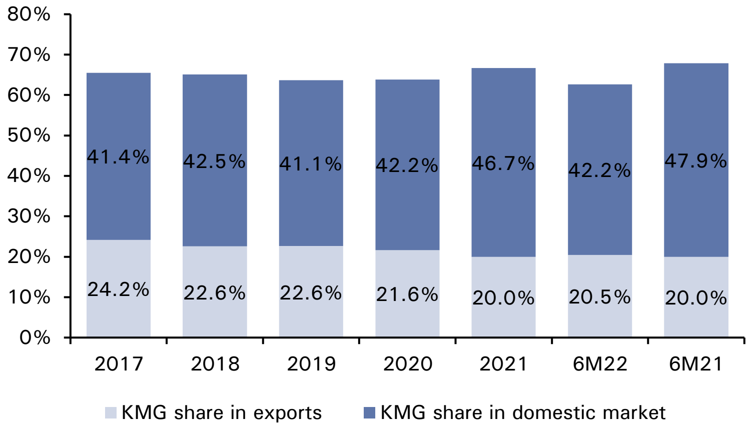
Graph 7. Trend of the Group's share in Kazakhstan's oil production for 2017 - 6M2022



Source: Group data

In general, KMG's share in oil exports has been approximately 20% over the past year and half. In 2017, the share in exports was higher and amounted to 24.2%, however, this figure decreased amid decrease in oil production by operating assets and increase in domestic consumption. At the same time, KMG's share in oil supplies to the domestic market amounted to 42% in the 1H2022. In general, this figure is at a stable level, although it increased to 46.7% in 2021 most likely due to the OPEC + agreement and a sharp recovery in domestic consumption of petroleum products after the 2020 quarantine.

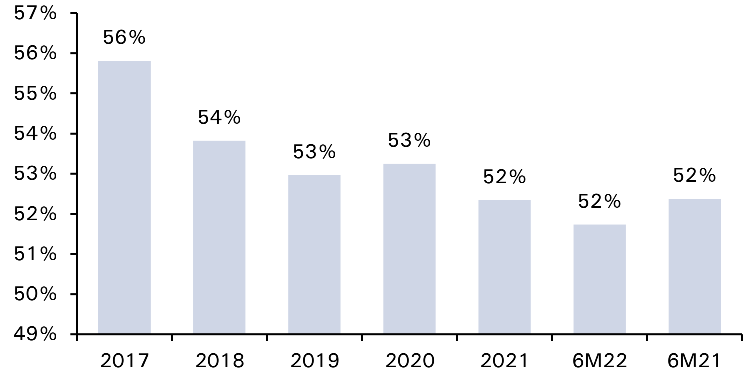
Graph 8. Trend of KMG share in oil exports and Kazakhstan domestic market sales 2017 - 6M2022



Source: Group data

In oil transportation, the Group's share is 51.7%, which is slightly lower than last year's figure. The decrease took place despite the CPC problems. The main reason for such trend was a slight drop in KTO transportation volumes amid a large discount on Urals oil. In general, there has been a decrease in this figure since 2017 due to an increase in the volume of CPC pumping after the launch of Kashagan.

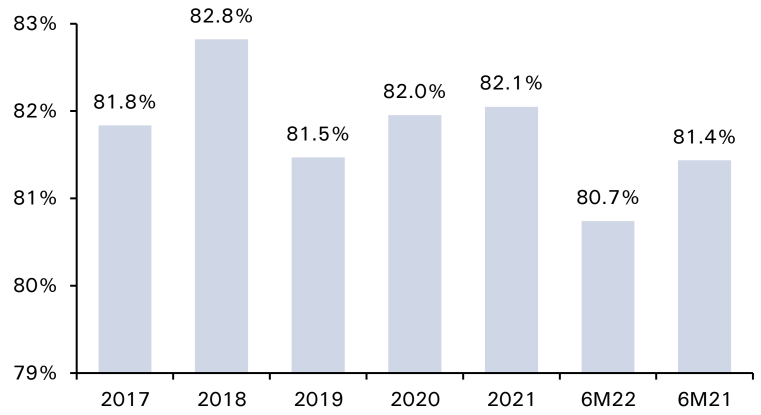
Graph 9. Trend of KMG share in oil transportation in Kazakhstan domestic market for 2017 – 6M2022



Source: Group data

In the crude oil refining segment, the Group's market share was 80.7% in the 1H2022. In general, this figure is at a stable level of 82% due to a 100% share in two of the three largest refineries in Kazakhstan.

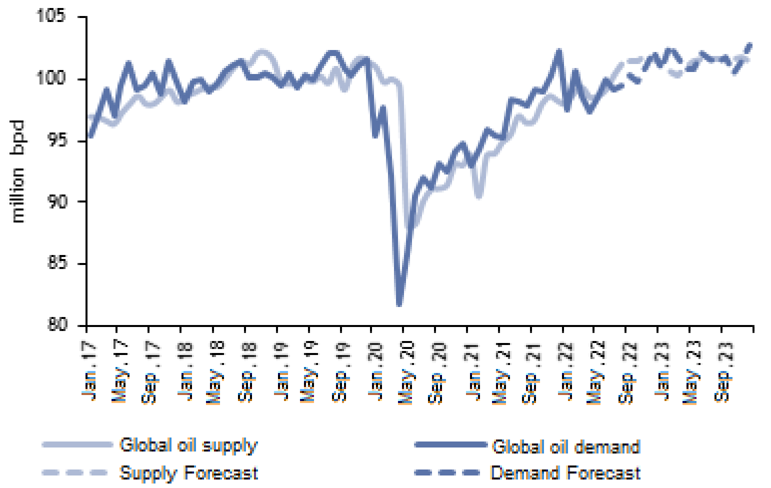
Graph 10. Trend of KMG share in oil refining in Kazakhstan for 2017 – 6M2022



Source: Group data

Oil demand and supply. According to the EIA (US Energy Information Agency), global oil demand was 99.4 million bpd in August. At the same time, oil supply reached 101.3 million bpd. In general, there is some discrepancy in the trends of supply and demand in 2022. From the beginning of the year to August, oil production increased by 3%, then demand fell by 2.8%. But in 2021, on the contrary, demand growth outpaced supply growth (8% YoY versus 5.6% YoY). EIA expects that demand will still slightly exceed supply by the end of 2022. According to the agency's forecast, demand will reach 102.3 million, and supply 101.6 million bpd. In 2023, a slight excess of demand over supply is also expected.

Graph 11. Trend and forecast of global oil supply and demand for 2017 - 2023, million bpd



Source: EIA data

The main consumers of oil are the USA, China and Europe, which account for approximately 50% of all oil consumption. In general, there is an increase in oil consumption in China. From 2017 to 2021, consumption growth in the Celestial Empire amounted to 15.7%, or 13.2-15.3 million bpd. The EIA expects consumption to continue rising to nearly 16 million bpd in 2023. Over the same period, there has been a 5.5% decline in consumption by OECD countries. The decline leaders are Japan (-13.7%), Europe (-9%) and Canada (-7.3%). However, OECD consumption is expected to continue recovering in 2022, which will also increase global oil demand. In the United States, consumption rates remained virtually unchanged over the same period.

Table 13. Trend and forecast of the share of separate countries and regions in oil consumption for 2017-2023

	2017	2018	2019	2020	2021	2022П	2023П
Non-OECD	52.0%	52.3%	52.6%	54.2%	53.9%	53.8%	54.4%
OECD	48.0%	47.7%	47.4%	45.8%	46.1%	46.2%	45.6%
USA	20.3%	20.6%	20.5%	20.0%	20.6%	20.7%	20.7%
China	13.3%	13.6%	13.9%	15.7%	15.7%	15.3%	15.7%
Europe	15.3%	15.1%	15.0%	14.3%	14.2%	14.3%	13.9%
Japan	4.0%	3.8%	3.7%	3.7%	3.5%	3.4%	3.3%
Canada	2.5%	2.5%	2.5%	2.4%	2.3%	2.4%	2.4%

Source: EIA data

Oil production is carried out in many countries of the world. The clear leader is the United States, which produces about one-fifth of the world's oil. Next are Russia with a share of 11.3% and Saudi Arabia with a share of 9.5%. Also quite large oil producers are Canada and China with shares in world production of 5.8% and 5.2%, respectively. The share of Kazakhstan is 2%, and the country holds 14th place in the ranking of the largest oil producers. The Organization of the Petroleum Exporting Countries (OPEC) was created to control oil production quotas. It includes 13 countries and its share in world production is 33%. However, this figure is gradually decreasing. Thus, the share of OPEC was 37.7% in 2017. In recent years, oil production has increased most rapidly in the United States, where it reached 19 million bpd in 2021 (+ 21% to 2017). It is expected that the United States will produce 21.4 million barrels of oil per day in 2023, which will increase the share to

21.2%. At the same time, a visible drop in oil production is expected in Russia: from 10.8 million in 2021 to 9.3 million bpd in 2023.

Table 14. Trend and forecast of oil production of the largest producers for 2017 - 2023, million bpd

	2017	2018	2019	2020	2021	2022П	2023П
USA	15.7	17.9	19.5	18.6	19.0	20.2	21.4
Russia	11.2	11.4	11.5	10.5	10.8	10.9	9.3
Saudi Arabia	10.1	10.4	9.8	9.2	9.1	n.a.	n.a.
Canada	5.0	5.4	5.5	5.2	5.5	5.7	5.9
China	4.7	4.8	4.9	4.9	5.0	5.2	5.3
Europe	4.1	4.2	4.0	4.2	4.1	4.0	4.3
Iraq	4.4	4.6	4.7	4.1	4.1	n.a.	n.a.
Brazil	3.4	3.4	3.7	3.8	3.7	3.8	4.1
UAE	2.9	3.0	3.1	2.8	2.7	n.a.	n.a.
Kuwait	2.7	2.8	2.7	2.4	2.4	n.a.	n.a.
Iran	3.8	3.5	2.3	2.0	2.4	n.a.	n.a.
Norway	2.0	1.9	1.7	2.0	2.0	2.0	2.3
Mexico	2.3	2.1	1.9	1.9	1.9	1.9	1.9
Kazakhstan	1.9	2.0	2.0	1.9	1.9	1.8	2.0
Qatar	1.8	1.8	1.7	1.8	1.8	1.9	1.9

Source: EIA data

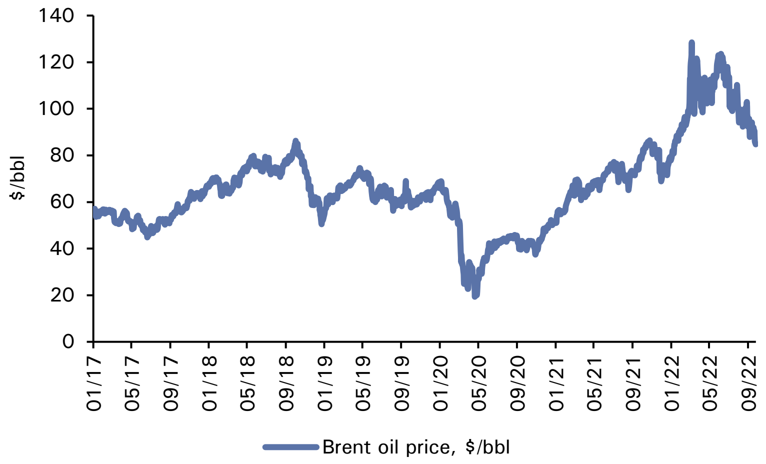
Table 15. Trend and forecast of the share of the largest oil producers for 2017-2023

	2017	2018	2019	2020	2021	2022П	2023П
USA	16.0%	17.8%	19.5%	19.8%	19.8%	20.2%	21.2%
Russia	11.5%	11.3%	11.4%	11.2%	11.3%	10.9%	9.2%
Saudi Arabia	10.3%	10.3%	9.8%	9.8%	9.5%	n.a.	n.a.
Canada	5.1%	5.3%	5.5%	5.6%	5.8%	5.7%	5.8%
China	4.8%	4.7%	4.8%	5.2%	5.2%	5.2%	5.2%
non-OPEC	62.3%	63.4%	65.5%	67.3%	66.9%	65.9%	65.9%
OPEC	37.7%	36.6%	34.5%	32.7%	33.1%	34.1%	34.1%

Source: EIA data

Oil prices. In general, after the bullish period in 2007-2008, when quotes reached $140, and after the period of 2011-2014, when the price averaged around $110, oil prices did not show a significant positive trend. By the beginning of 2015, prices fell from $110 to $45, and by the beginning of 2016, from $70 to $26 per barrel of oil. There were several reasons: the excess of supply over demand, the development of shale technologies and alternative energy sources, a long reaction of OPEC, etc. However, after this turbulent period, prices began to show a slow but steady increase in quotes. Growth was also driven by the creation of OPEC+ at the end of 2016, which, in addition to 13 OPEC countries, also included 10 countries, including Russia and Kazakhstan. However, since September 2018, stock markets and prices for many types of raw materials began to decline amid the start of a cycle of tightening the Fed's monetary policy. Then, the quotes recovered slightly in 2019, but were still in a downtrend. In January 2020, amid the aggravation of the US-Iranian conflict, prices rose above $70 per barrel. Then the pandemic caused by the spread of COVID-19 occurred, which forced many countries to drastically reduce oil consumption due to quarantine measures. This caused the deepest shock to the oil market, the price of US WTI oil fell to negative levels due to the full storage tanks. Also, OPEC+ was unable to agree on production cuts in early March 2020. However, prices began to recover along with the stock markets from the end of April, and OPEC + eventually agreed to reduce production. As a result, the market picked up and oil returned to $70 by March 2021 amid the soft monetary policy of many countries of the world due to quarantine, the gradual easing of quarantine measures and the slow recovery of production by OPEC+ countries. Then almost the whole world was swept by rising inflation. It is believed that usually raw materials can become a good instrument for hedging in inflationary period, which also caused an increase in quotations. However, the price reached “only” $78 by the end of the year. But the beginning of the Russian military invasion of Ukraine at the end of February eventually sent prices to $138 per barrel due to the reluctance of Ukraine's allies to buy energy resources from Russia.

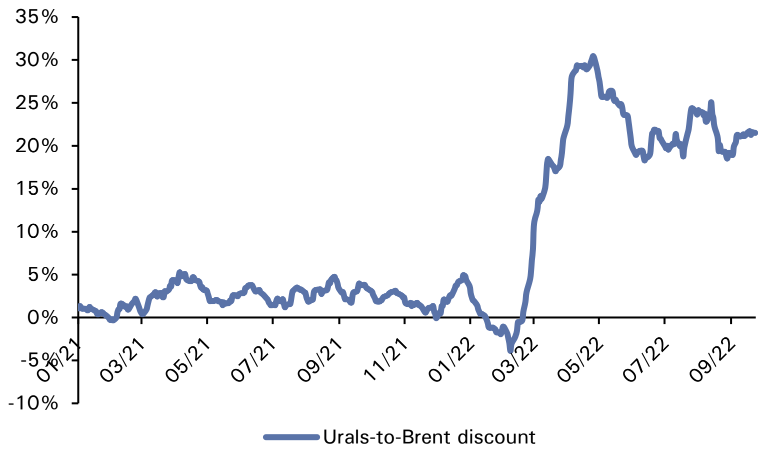
Graph 12. Brent oil price trend for 2017 – September 2022, $/bbl



Source: Bloomberg data

As a result, amid these circumstances, the Urals oil, under which a significant share of Kazakh oil was sold, discount significantly increased. The discount reached about 30% at its peak and is now around 22%. Because of this situation, the volume of transportation of Kazakh oil in the direction of the Baltic Sea has sharply decreased. Oil producers began to develop alternative and more profitable export routes. Kazakhstan also created a new local brand of oil KEBCO (Kazakhstan export blend crude oil) for mutual settlements within the KazMunayGas structure.

Graph 13. Urals-to-Brent oil discount trend for 2021 - September 2022, %



Source: Bloomberg data

As of the end of September, according to analysts who submitted their forecasts to Bloomberg, the consensus price for Brent oil is $99 per barrel. According to further forecasts, some price reduction is expected towards $81.5 per barrel.

Table 16. Current oil price forecasts according to the Bloomberg terminal for 2022-2026

Company	Forecast Date	2022	2023	2024	2025	2026
Intesa Sanpaolo SpA	September 23, 2022	101.5	93.0	87.0	82.0	78.0
Citigroup Inc	September 22, 2022	99.0	75.0	52.0		
Westpac Banking Corp	September 20, 2022	94.5	87.4	102.8	105.1	
Fitch Solutions	September 13, 2022	105.0	100.0	88.0	88.0	85.0
Goldman Sachs	September 1, 2022	111.1	125.0	90.0		
Rabobank International	September 1, 2022	94.5	112.8	95.8		
Landesbank Baden-Wuerttemberg	August 26, 2022	96.0	87.5			
MPS Capital Services Banca per le ImpreseSpA	August 19, 2022	95.0				
Natixis SA	August 04, 2022	106.2	100.0			
Median		**99.0**	**96.5**	**89.0**	**88.0**	**81.5**

Source: Bloomberg data

Development strategy and medium-term plans of KazMunayGas

In 2021, the Group adopted a new development strategy until 2031. The previous strategy was more focused on financial sustainability and incremental organic growth. The new strategy assumes a focus on core business, the desire to ensure organic growth and improve operations in all key segments. In general, there are 4 strategic directions to achieve the goal.

Sufficient resource base to ensure the growth of the Group. The Group intends to continue maintaining and developing its traditional hydrocarbon business, expecting that oil will remain the dominant type of fuel until at least 2045. As part of this goal, the Group intends to ensure the growth of hydrocarbon reserves through exploration and development, including together with international oil and gas companies. The Group's goal is to increase total oil reserves by 299 million tons, of which 253 million will be ensured by organic growth.

Improving the efficiency of the Group's value chain. This goal implies a focus on maximizing the benefits from all activities of the Group. To this end, the Group intends to improve the oil recovery factor and the turnaround time, as well as apply various measures to achieve maximum well productivity. The Group plans to produce a total of 240 million tons of oil from 2022 to 2031. Moreover, it sets the task of ongoing operation of the refinery and achieving a level of refining depth of up to 89%. The Group intends to use its oil transportation infrastructure to maximum effect and focus on optimizing costs across the business. KMG also plans to implement a privatization and divestment program to dispose non-core assets.

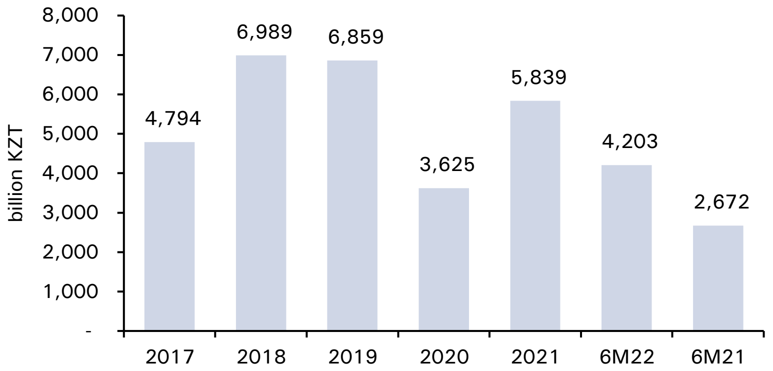
Business diversification and product portfolio scale-up. The availability of cheap raw materials has become a key reason for ensuring the growth of the Group through the creation of new petrochemical facilities, including thanks to the support of the Government of the Republic of Kazakhstan. It is planned to complete the construction and launch the KPI polypropylene plant in 2022. Also in the medium term, it is expected to implement projects for the production of butadiene and polyethylene together with international oil and gas partner companies.

Sustainable development and progressive decline in hydrocarbon production. The Group aims to be in the top quartile on all ESG metrics over the medium term. In 2021, Sustainalytics assigned KMG with an ESG risk rating at 28.4. This indicator corresponds to the range of the average level of risk. The key challenge for the Group is emissions from operations and the use of the Group's products. KMG's goal is to strengthen figures in the range of the average level of the ESG risk rating. Moreover, the Group developed the Low-Carbon Development Program for 2022-2031. It is planned to reduce CO_2 emissions by 15% by 2031 and implement renewable energy projects with a total capacity of at least 300 MW.

KazMunayGas financial review

Recovery of income. The Group significantly increased revenue in 2021 and 2022 amid rising of oil prices. The average price of oil expressed in tenge increased by 75% YoY in 2021, and by another 76% in the 1H2022. In 2020, the revenue decreased to 3.6 trillion tenge, and in 2021, it increased by 61% and reached 5.8 trillion tenge. Moreover, in the 1H2022, revenue continued to grow and reached 4.2 trillion tenge (+57% YoY).

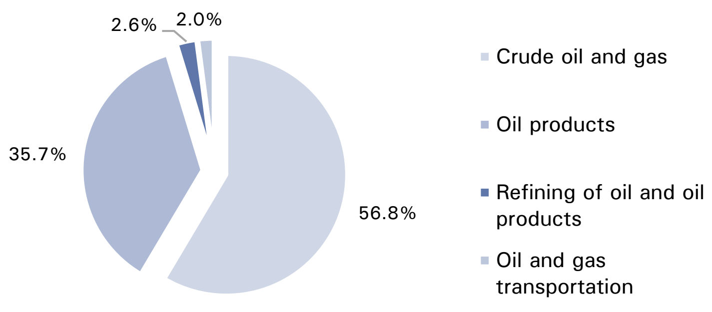
Graph 14. Group revenue for 2017 – 6M2022, billion KZT



Source: Group data

Looking at segment information, the increase in revenue is driven by crude oil and gas, whose revenues grew by 73%. Also, the sale of petroleum products increased by 54% in 2022. In general, KMG's main income is driven by crude oil, gas (57%) and oil products (36%) in the structure of revenue. We note that most of this revenue is driven by the resale of oil and oil products of third parties.

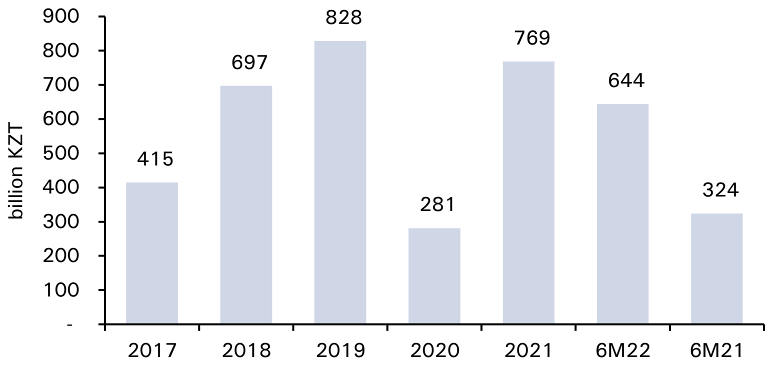
Graph 15. Group's revenue structure for 6M2022



Source: Group data

Share in income of joint companies. Another important source of income is the share in the income of joint companies. Joint ventures with an ownership interest of 50% or less are not consolidated and are reported separately as the Group's share of profits. This figure also significantly depends on oil prices and reached 644 billion tenge in the 1H2022 (+99% YoY).

Graph 16. Share in income of the Group's joint companies for 2017 - 6M2022, billion KZT



Source: Group data

The main source of profit in this income item are TCO, Kashagan, CPC and MMG. These four companies accounted for 94% of profits in the 1H2022. In general, the profits of all major joint ventures are growing along with oil prices. KMG Kashagan has shown strong profit growth in recent years thanks to increased oil production since launch. After the repurchase of 50% stake in KMG Kashagan B.V., Kashagan's financials will be consolidated and removed from this article.

Table 17. Structure and trend of the Group's share in income of joint ventures for 2017 – 6M2022, billion KZT

	2017	2018	2019	2020	2021	6M22	6M21
TCO	290	439	415	173	442	401	200
CPC	55	58	71	82	91	64	23
Kashagan	(10)	34	13	(7)	88	97	44
MMG	50	96	82	17	80	41	35
Others	31	71	247	16	68	41	23
TOTAL	**415**	**697**	**828**	**281**	**769**	**644**	**324**

Source: Group data

Growth in operating expenses along with revenue. In 2021, the operating expenses of the Group increased by 46% YoY and amounted to KZT 5.4 trillion. In the 1H2022, this figure increased by 60% YoY, and expenses reached KZT 3.9 trillion. The main driver of the growth is the cost of purchased oil and oil products, which increased by 74% YoY this year. Also this year, production costs increased by 54% YoY and taxes by 53%, which depend on the price of oil to the various extents. In general, production costs remained relatively stable in recent years, but this year, the increase was largely due to higher wages, which is a widespread trend in national companies.

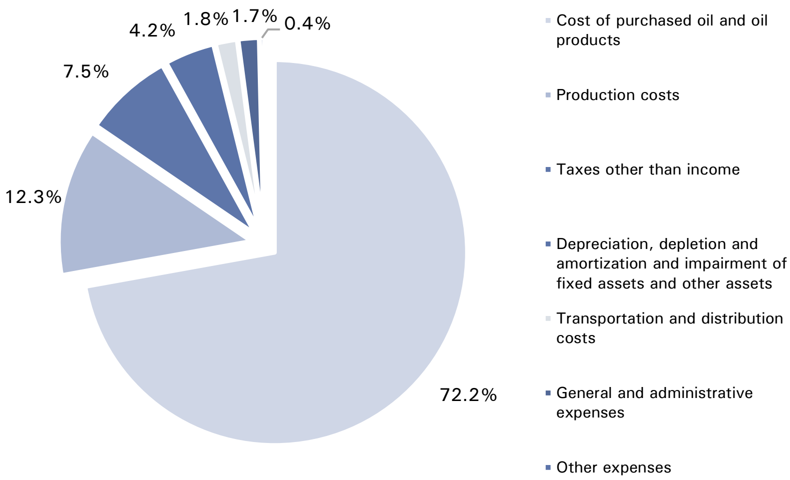
Table 18. Group's operating expenses trend for 2017 – 6M2022, billion KZT

Operating expenses	2017	2018	2019	2020	2021	6M22	6M21
Cost of purchased oil and oil products	2,730	4,313	3,914	1,901	3,596	2,818	1,621
Production costs	624	604	722	656	693	482	313
Taxes other than income	354	478	454	254	429	291	190
Depreciation, depletion and amortization and impairment of fixed assets and other assets	263	451	488	561	343	163	164
Transportation and distribution costs	238	371	420	137	132	70	66
General and administrative expenses	164	213	214	147	148	67	57
Other expenses	20	23	64	79	104	14	30
TOTAL	**4,393**	**6,453**	**6,277**	**3,735**	**5,445**	**3,905**	**2,440**

Source: Group data

In the structure of operating expenses, the main item is Cost of purchased oil and oil products, the share of which is 72.2%. This item is the main for the oil trading division of the Group.

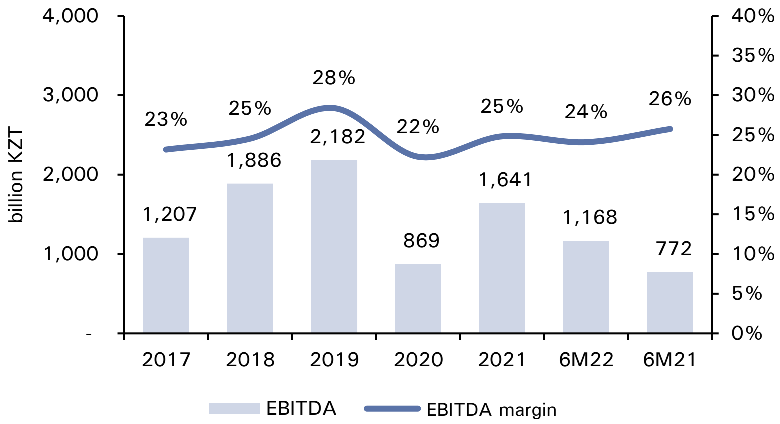
Graph 17. Group's operating expenses structure for 6M2022



Source: Group data

Stable EBITDA margin. In the 1H2022, EBITDA of the Group reached KZT1.2 trillion showing an increase of 51% YoY. For the entire last year, this figure amounted to KZT 1.6 trillion. EBITDA margin has generally remained fairly stable over recent years. On average, over the past 5.5 years, the margin was 24.5%, and 24.1% in the 1H2022.

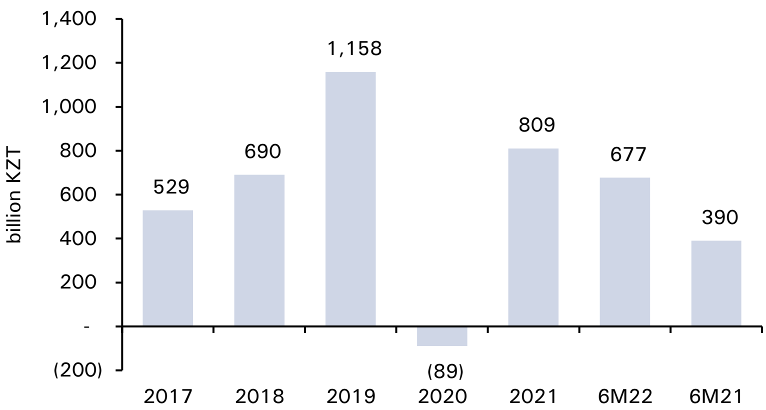
Graph 18. Group's EBITDA and EBITDA margin trend for 2017 – 6M2022, billion KZT



Source: Group data

Net profit amid volatility in oil prices. Increase in income amid rising oil prices also led to an increase in net profit, which reached KZT 677 billion in the 1H2022 (+74% YoY). In general, profits are quite dependent on oil prices and profits in joint ventures. In 2020, the net loss amounted to KZT 89 billion with an average oil price of $42. The net margin has been around 13% for the last year and a half.

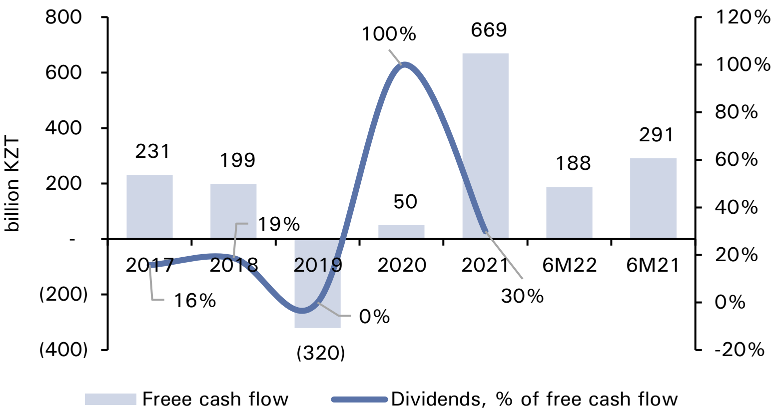
Graph 19. Group's net profit trend for 2017 - 6M2022, billion KZT



Source: Group data

Sharp increase in free cash flow. There is a sharp increase in free cash flow in 2021 and 2022. The main reason for such growth of the figure is a sharp increase in dividends received from joint ventures. For example, TCO did not pay dividends in 2019 and 2020 due to large capital expenditures for expanding production. However, in 2021, TCO paid dividends in the amount of KZT 408 billion and, most likely, will continue to pay in the future, since the main capex for expansion has already been incurred. In addition, the future growth of TCO's oil production should also have a positive impact on dividends. Moreover, another driver of free cash flow growth was Kashagan, which also began to return investments to its shareholders.

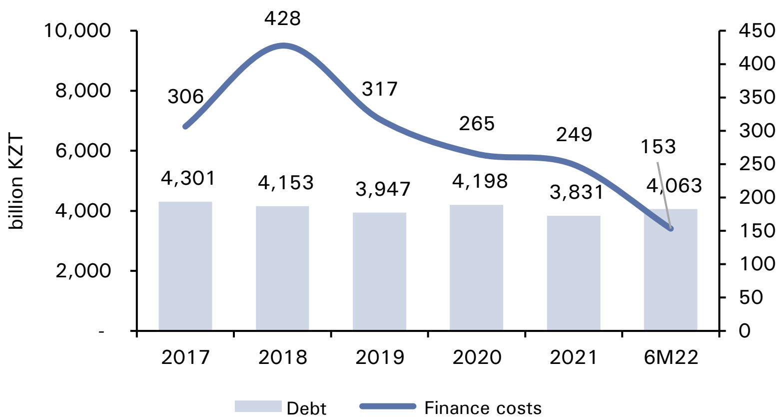
Graph 20. Group free cash flow and dividends trend for 2017 - 6M2022, billion KZT



Source: Group data

Decrease in finance costs. In recent years, there has been a fairly significant drop in finance costs. In 2018, this figure amounted to KZT 428 billion, and in 2021, finance costs decreased to KZT 249 billion. In the 1H2022, finance costs amounted to KZT 153 billion, which is 32% more than last year. One of the reasons for such growth was the weakening of the tenge, as 83% of the debt is denominated in USD. However, the Group is unlikely to feel much of global increase in interest rates across the world, as only 17% of debt bear floating rate.

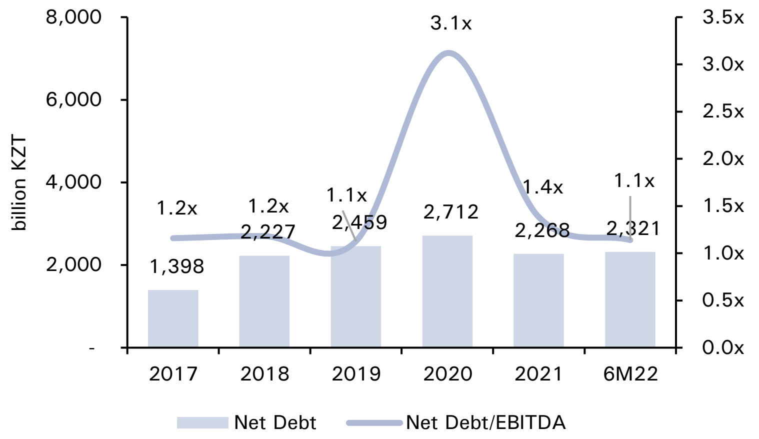
Graph 21. Group debt and finance costs trend for 2017 - 6M2022, billion KZT



Source: Group data

Decrease in net debt compared to 2019. At the end of June 2022, the Group's net debt amounted to KZT 2.3 trillion, which is 5.6% less than in 2019 and 14% less than at the end of 2020. Overall, the Net Debt/EBITDA ratio remains stable at 1.1-1.2x, barring an anomalous 2020. Such level of leverage is generally considered to be quite healthy. Specifically for the oil and gas industry, this ratio is close to average values. Most of the large vertically integrated oil and gas companies have 0.9-1x ratio.

Graph 22. Net debt and net debt-to-EBITDA ratio trend for 2017 - 6M2022, billion KZT



Source: Group data

KazMunayGas: assumptions and valuation model

Investment Summary. The Group launches the IPO in the midst of high oil prices and geopolitical uncertainties regarding Russia, which caused certain restrictions on the supply of oil on the world market. Sanctions against Russia adversely affected the Group only indirectly. The main oil export pipeline obtained separate official approval from the United States to continue unhindered operation. We also note that KazMunayGas has stakes in fundamentally strong oil and gas assets with high levels of reserves, which allows us to expect long-term cash flows. Moreover, the Group has such growth factors as an increase in oil production at the Tengiz field, the repurchase of 8.44% stake in Kashagan on preferential terms and the launch of new petrochemical production facilities. All these factors allow us to assume a significant increase in dividends in the coming years.

The target price for 1 ordinary share is KZT 12,800. We calculated our target price at KZT 12,800 per share, which implies upside potential of 52% of the offering price. This target price is the final result of our assumptions modeling within a discounted cash flow (DCF) model. Moreover, we performed comparative valuation, which resulted in a fair value of KZT 9,800 per share.

Key Points of the DCF Valuation Model. The key to the valuation is the forecast oil price based on analysts' forecasts provided by Bloomberg. We set a price of $99 per barrel of oil for the 2H2022 with a further decrease to $75 per barrel in 2027. Further, in 2032, the forecast price drops to $70 per barrel, and in 2037 to $68 per barrel, which roughly corresponds to the average historical oil price in the 21st century. Another important point of the valuation is that we separately valued KMG together with its consolidated subsidiaries, and separately valued the following most significant joint ventures (not included in the consolidation): Tengizchevroil, KTK, KMG Kashagan and Mangistaumunaigaz (94 % of profit from all joint ventures). The rest of the joint ventures were valued using the Group's implied price-earnings multiple derived from comparative valuation. In the future, after the consolidation of KMG Kashagan due to the repurchase of 50% stake, this company will not be valued separately.

Revenue. The basis for calculating the revenue of all 5 companies is the price of oil and operating indicators such as oil production, oil transportation and production of petroleum products. To calculate revenues from the sale of oil and gas, we calculated the average selling price and the discount thereof to Brent oil. Further in the forecasts, we apply historical discount rates to calculate the forecast revenue. For oil production, we mostly keep current production levels using the Group's own forecasts and historical data. Tengiz stands apart, which is expected to increase production to 40 million tons of oil per year by 2025. Forecast transportation volumes depend on oil production volumes. The length of the forecast period in the valuation model depends on when the 2P oil reserves for each company run out. In the case of a separate valuation of KMG, we assume further operation of the refinery in the future. Therefore, we use the post-forecast period in this valuation model. As the fields are depleted, the refining of petroleum products becomes less marginal. Also, in our revenue forecasts, we take into account the volume of resale of oil, which is handled by the Group's trading company.

Operating expenses. The Group has two main types of operating expenses: the cost of purchased oil and petroleum products and production costs. Production costs are largely tied to oil production and the production of petroleum products. That is, as the deposits are depleted, production costs will also decrease. Moreover, as the fields are depleted, we anticipate a decrease in the volume of oil resale, which ultimately also reduces its cost. There are other operating expenses, such as selling and transportation costs and general and administrative expenses, which are linked to revenue. The operating costs of producer companies are tied to the level of oil production and increase with inflation.

Taxes. The Group has a rather complex tax structure. The main tax payments, apart from income tax, are the mineral extraction tax (MET), export rent tax and export customs duty (ECD). The MET rate is calculated for each company separately and depends on the volume of production per year. For example, if a subsoil user produces from 2 to 3 million tons of oil per year, then the MET rate is 10% of the cost of oil. At the same time, for oil sold on the domestic market, the MET rate is halved. The export rent tax and the ECD are tied to the exported oil, and they depend on the oil price. The higher the price, the higher the rate. At the same time, there are various preferential regimes for various subsoil users. For example, Ozenmunaigas has a preferential MET rate of 2.3%. In megaprojects, there are special tax regimes under the production sharing agreement. Thus, TCO and KMG Kashagan apply 30% income tax rate, but not 20% as stipulated under the tax code. Moreover, TCO does not pay the above operating taxes, but pays royalties. The base royalty rate is 25% of operating income and the additional royalty rate is based on cash flow. Now KMG Kashagan does not pay operating taxes. However, we have assumed taxes based on TCO history starting from 2030, when investors' investment is likely to pay off.

Valuation of shares and interest in joint companies. We separately valued four companies: TCO, Kashagan, MMG and CPC. The valuation of all of them, except MMG, was based on financial statements for 2021. It should be noted that a full revaluation of TCO and CPC in the future will occur with some delay and only once a year. In the case of Kashagan, we received confidential access to the financial statements. However, in the future, the impact of this will be leveled due to the consolidation of financial performance after KMG will again take over all 100% in KMG Kashagan N.V. In general, the valuation of these companies was standard in terms of approach, but they all have their own nuances. The CPC valuation was based on statements of CPC-K JSC, which has the same shareholders as CPC-R JSC owning the oil pipeline. Since 100% financial performance of CPC-K is broadly in line with the Group's 20.75% interest in CPC, we decided to value the company based on CPC-K's statements. In addition, the Group has a number of smaller joint ventures that do not have a significant share in the Group's profits. We valued these companies using KMG's implied price-earnings multiplier obtained after the comparative method. After the valuation, we applied a minority stake discount of 11.7-19.5% for companies with an interest of less than 50% (TCO, KMG, Kashagan, CPC), depending on the interest and availability of a blocking stake. In this case, the main motivation is that the operations of these companies are not controlled by the Group. For example, the Group does not have full control over the dividend policy of these companies. Above all, these companies are very important to the Group, as most of the Group's profits and dividends are generated by these companies, and most of the current valuation has come from these companies. The rate of the discount was determined based on transactions in the energy sector over the past 10 years.

Weighted average cost of capital. The weighted average cost of capital (WACC) was calculated separately for each company. In the case of companies that generate only dollar cash flows (TCO, Kashagan, CPC), we used the USD WACC, taking into account country risk. We also note that the country risk of Russia was used for CPC. In cases of consolidated valuation of KMG and Mangistaumunaigaz, we used partly KZT and partly USD WACC, as these companies sell a significant part of their oil on the domestic market.

Comparative valuation. We also valued the Group using comparative method. For this, 18 vertically integrated companies with market capitalizations from $4.8 to $48 billion were taken. Main 80% weight was given to EV/EBITDA ratio in the valuation, as the most suitable for the valuation of oil and gas companies. The remaining ratios were given the following weights: P/E (10%), P/S (5%), P/B (5%). All of these ratios, except P/B, were used forward for 2025. That is, we used the forecast market estimate for these financial performances of peers, and also used our own forecasts of the Group's financial performances obtained using the DCF method. As a result, according to this method, our valuation is KZT 5.97 trillion, or KZT 9,800 per share.

Finally, we valued KazMunayGas using the DCF method based on a discounted cash flow forecast. We note that the availability of large and developed oil and gas assets allow the Group to generate cash flows for many years. Moreover, the Group has significant upside potential in operating and financial performance amid increased oil production and the launch of production in the petrochemical sector. However, we note that KazMunayGas' operations are highly dependent on oil prices, and the story of Russian sanctions could still have a negative impact on the Group in case of worst-case scenarios for the future.

KazMunayGas Consolidated Valuation

Illus. 1. KazMunayGas equity valuation model using the DCF method

Production performance	2021A	Jan-Jun 22A	Jul-Dec 22	2023	2024	2025	2026	2027	2043	Terminal period
Oil production (thousand tons)	9,380	4,555	4,555	9,777	9,977	10,077	10,077	10,077	677	0
Ozenmunaigas JSC	5,332	2,501	2,501	5,374	5,374	5,374	5,374	5,374	0	0
Embamunaigas JSC	2,522	1,267	1,267	2,715	2,715	2,715	2,715	2,715	0	0
Amangeldy Gas LLP (condensate)	11	0	0	0	0	0	0	0	0	0
Kazakhturkmunay LLP	434	216	216	412	412	412	412	412	0	0
Urikhtau Operating LLP	47	22	22	200	400	500	500	500	0	0
Karachaganak	1,034	549	549	1,077	1,077	1,077	1,077	1,077	677	0
Oil sales (thousand tons)	17,722	8,726	8,658	18,597	19,019	19,177	19,185	19,191	1,289	0
Export	3,924	1,924	1,933	4,551	4,768	4,885	4,903	4,920	-	-
Domestic market	5,456	2,631	2,622	5,227	5,209	5,192	5,175	5,157	677	-
Crude oil for resale	8,342	4,171	4,103	8,819	9,041	9,100	9,107	9,113	612	-
Oil refining (thousand tons)	15,787	7,993	7,993	15,986	15,986	15,986	15,986	15,986	15,986	15,986
AOR (100%)	5,473	2,681	2,681	5,362	5,362	5,362	5,362	5,362	5,362	5,362
POCR (100%)	5,407	2,839	2,839	5,678	5,678	5,678	5,678	5,678	5,678	5,678
Petromidia (100%)	4,586	2,310	2,310	4,620	4,620	4,620	4,620	4,620	4,620	4,620
Vega (100%)	321	163	163	326	326	326	326	326	326	326
Oil transportation (thousand tons)	54,582	27,022	26,809	57,579	59,106	59,705	59,794	59,692	2,799	2,106
KazTransOil JSC	41,224	19,959	20,116	43,447	44,453	44,880	44,964	44,988	0	0
MunaiTas JSC	2,179	1,337	967	2,128	2,283	2,407	2,419	2,302	0	0
Batumi Oil Terminal LLC	1,324	1,053	1,053	2,106	2,106	2,106	2,106	2,106	2,106	2,106
Caspian Sea	537	294	276	608	610	626	620	622	42	0
High Seas (Black, Mediterranean)	9,318	4,379	4,397	9,290	9,654	9,686	9,685	9,674	651	0

Revenue model, billion KZT	2021A	Jan-Jun 22A	Jul-Dec 22	2023	2024	2025	2026	2027	2043	Terminal period
Oil prices, $/barrel	71	108	99	97	89	88	82	75	68	68
Oil prices, $/ton	533	812	744	726	669	662	613	564	511	511
Oil sales price, $/ton	410	624	572	557	513	507	469	431	384	384
Revenue segments										
Crude oil and gas	3,097	2,386	2,353	5,241	5,234	5,552	5,511	5,068	303	-
Oil products	2,102	1,499	1,575	2,363	2,370	2,493	2,451	2,331	1,409	1,353
Refining of oil and oil products	203	107	118	185	194	212	217	214	205	199
Oil and gas transportation	171	84	84	180	185	187	187	187	9	7
Other income	265	126	131	257	263	284	287	273	88	72
Revenue	5,839	4,203	4,260	8,226	8,246	8,728	8,653	8,073	2,014	1,630
growth rate, %				*-2.8%*	*0.2%*	*5.8%*	*-0.9%*	*-6.7%*		*-19.1%*

Operating cost model, billion KZT	2021A	Jan-Jun 22A	Jul-Dec 22	2023	2024	2025	2026	2027	2043	Terminal period
Cost of purchased oil and oil products	3,595	2,818	2,811	5,168	5,191	5,462	5,411	5,050	1,409	1,188
Production costs	693	482	490	1,079	1,125	1,160	1,184	1,184	80	-
Export Rent Tax	129	103	100	244	223	240	239	208	-	-
MET	92	59	58	132	131	135	123	115	-	-
Export Customs Duty	107	60	87	219	217	237	240	211	-	-
Other taxes	101	69	70	154	160	164	167	166	11	-
Transportation and distribution costs	132	70	72	161	170	177	182	188	18	-
General and administrative expenses	148	67	70	141	146	160	164	158	59	48
Total operating expenses	4,998	3,728	3,758	7,297	7,364	7,736	7,711	7,280	1,576	1,237

Forecast period model, billion KZT	2021A	Jan-Jun 22A	Jul-Dec 22	2023	2024	2025	2026	2027	2043	Terminal period
EBITDA	872	524	502	929	882	992	942	792	438	394
EBITDA margin	15%	12%	12%	11%	11%	11%	11%	10%	22%	24%
EBIT	529	361	341	577	510	597	526	356	60	10
Operating profit margin	9%	9%	8%	7%	6%	7%	6%	4%	3%	1%
(−) Tax on EBIT			68	115	102	119	105	71	12	2
(=) **NOPAT**			273	462	408	478	421	285	48	8
(−) net reinvestment (including D&A)			69	147	92	119	86	30	(235)	4
Capex			237	465	473	508	511	484	148	
WC adj.			(7)	34	(9)	5	(8)	(17)	(5)	
DD&A			161	352	372	394	417	436	378	
(=) **FCFF**			204	315	316	359	334	255	284	4
(x) discount factor			0.96x	0.83x	0.72x	0.62x	0.54x	0.47x	0.05x	
PV FCF			196	262	228	224	180	119	13	

WACC calculation	
Cost of equity	
Risk-free rate	9.9%
Market equity premium	7.2%
Calculated Beta	1.43
Total cost of equity	20.1%
Cost of debt capital	
Cost of debt capital (before taxes)	9.9%
Corporate Income Tax	20.0%
Total cost of debt capital	8.0%
Capital structure	
Equity	63%
Debt capital (D/(D+E))	37%
Weighted average cost of capital (WACC)	15.6%

KMG equity valuation separately, billion KZT	
(=) Value in the forecast period	1,907
(=) Value in the terminal period	1
(=) EV	**1,909**
(+) Cash and deposits with banks	1,742
(–) Debt (incl. operating lease)	3,730
(=) Equity value	**-114**
Valuation of equity in joint companies, KZT billion	
TCO	3,543
KMG Kashagan	2,751
CPC	698
MMG	592
Others	338
(=) Total KMG value, billion KZT	**7,807**
(=) Total KMG value, billion USD	**16.4**
Target price per share, KZT	**12,800**
Offering price, KZT	8,406
Upside potential, %	52%

Freedom Finance JSC calculations

Illus. 2. KazMunayGas equity valuation model using comparative method

KMG comparative valuation						
Comparables by type of activity (Integrated)	**Country**	**P/E, 2025**	**EV/EBITDA, 2025**	**P/S, 2025**	**P/B**	**Capitalization, billion USD**
LUKOIL PJSC	Russia				0.6x	47.8
ENI SPA	Italy	6.9x	2.9x	0.5x	0.8x	41.6
SUNCOR ENERGY INC	Canada	5.2x	3.7x	1.4x	1.5x	42.8
GAZPROM NEFT PJSC	Russia	2.9x	2.3x	0.5x	0.8x	29.8
CENOVUS ENERGY INC	Canada	5.5x	3.8x	0.8x	1.8x	32.7
PTT PCL	Thailand	8.3x		0.4x	0.9x	25.9
IMPERIAL OIL LTD	Canada	6.9x	5.0x	1.0x	1.9x	29.1
OIL & NATURAL GAS CORP LTD	India			0.3x	0.6x	19.6
ECOPETROL SA	Colombia	4.4x	3.9x	0.8x	1.3x	18.9
REPSOL SA	Spain	5.3x	2.9x	0.4x	0.8x	18.2
SURGUTNEFTEGAS PJSC	Russia				0.1x	11.3
GUANGHUI ENERGY CO LTD-A	China				3.4x	11.2
OMV AG	Austria	5.4x	3.9x	0.5x	0.8x	12.9
GALP ENERGIA SGPS SA	Portugal	7.0x	3.5x	0.4x	2.1x	7.9
POLSKIE GORNICTWO NAFTOWE I	Poland				0.6x	5.6
YPF S.A.-D	Argentina		2.7x		0.7x	5.6
MOL HUNGARIAN OIL AND GAS PL	Hungary		2.7x	0.3x	0.5x	4.8
OMV PETROM SA	Romania		1.5x	0.7x	0.7x	4.8
Median analogs		**5.4x**	**3.2x**	**0.5x**	**0.8x**	**18.5**
Financial performance, billion KZT, 2025	**Profit**	**EBITDA**	**Revenue**	**Equity, 2021**	**Net debt**	
KMG	1,631	2,571	10,307	8,926	2,618	
Separate valuation, billion KZT	**P/E**	**EV/EBITDA**	**P/S**	**P/B**		

KMG comparative valuation				
KMG	8,854	5,599	4,838	7,262
Separate valuation, billion USD	**P/E**	**EV/EBITDA**	**P/S**	**P/B**
KMG	18.6	11.8	10.2	15.3
Weight	**10%**	**80%**	**5%**	**5%**
Total value, billion USD	**12.6**			
Total value, billion KZT	**5,969**			
Total value per share, KZT	**9,800**			

Bloomberg data, Freedom Finance JSC calculations

Valuations of joint and associated companies

Illus. 3. Tengizchevroil (TCO) equity valuation model using the DCF method

Revenue model, million USD	**2021A**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2038**	**2039**
Oil production (thousand tons) (KMG share)	5,311	5,734	5,600	6,800	8,000	8,000	8,000	8,000	8,000	8,000
Oil production (thousand tons) (100%)	26,553	28,670	28,000	34,000	40,000	40,000	40,000	40,000	40,000	40,000
Oil prices, $/barrel	71	99	97	89	88	82	75	75	68	68
Oil prices, $/ton	533	744	726	669	662	613	564	564	511	511
Oil sales price, $/ton	554	722	706	653	648	602	555	557	511	511
Revenue segments, million USD										
Crude oil	14,704	20,701	19,767	22,206	25,910	24,070	22,218	22,286	20,451	20,451
Other products	1,223	1,238	1,253	1,269	1,284	1,299	1,315	1,330	1,392	1,392
Other income	(6)	(8)	(7)	(7)	(7)	(5)	(4)	(3)	1	1
Revenue	15,920	21,931	21,014	23,468	27,188	25,364	23,529	23,613	21,843	21,843
growth rate, %		*37.8%*	*-4.2%*	*11.7%*	*15.9%*	*-6.7%*	*-7.2%*	*0.4%*		*0.0%*
Operating cost model, million USD	**FY2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2038**	**2039**
Operating expenses	1,083	1,345	1,484	2,001	2,601	2,868	3,154	3,462	7,736	8,278
Project costs	43	55	62	85	114	128	144	161	391	418
Transportation and distribution costs	1,712	1,728	1,743	1,762	1,781	1,797	1,813	1,828	1,893	1,893
Taxes other than income tax	3,575	4,612	4,055	4,344	5,736	4,984	4,222	4,085	2,347	2,107
Total operating expenses	6,413	7,741	7,344	8,193	10,232	9,776	9,333	9,537	12,367	12,696
Forecast period model, million USD	**FY2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2038**	**2039**
EBITDA	9,540	14,190	13,670	15,275	16,956	15,588	14,196	14,076	9,477	9,148
EBITDA margin	60%	65%	65%	65%	62%	61%	60%	60%	43%	42%
EBIT	7,683	11,319	9,261	9,300	10,749	9,142	7,505	7,135	4,821	4,227
Operating profit margin	48%	52%	44%	40%	40%	36%	32%	30%	22%	19%
(−) Tax on EBIT		3,396	2,778	2,790	3,225	2,743	2,252	2,141	1,446	1,268
(=) **NOPAT**		7,923	6,483	6,510	7,524	6,399	5,254	4,995	3,375	2,959
(−) net reinvestment (including D&A)		3,527	811	(384)	(3,321)	(3,751)	(3,923)	(3,883)	(1,154)	(1,356)
Capex		5,922	5,443	5,820	3,029	3,120	3,198	3,262	3,976	4,056
WC adj.		476	(224)	(229)	(143)	(424)	(430)	(204)	(474)	(491)
DD&A		2,871	4,409	5,975	6,207	6,446	6,691	6,941	4,656	4,921
(=) **FCFF**		4,396	5,672	6,893	10,845	10,150	9,176	8,878	4,528	4,315
(x) discount factor		0.94x	0.82x	0.72x	0.63x	0.56x	0.49x	0.43x	0.12x	0.10x
PV FCF		4,119	4,664	4,975	6,870	5,643	4,478	3,802	526	440

WACC calculation	
Cost of equity	
Risk-free rate	4.2%
Market equity premium	7.2%
Calculated Beta	1.52
Total cost of equity	**15.1%**
Cost of debt capital	
Cost of debt capital (before taxes)	9.1%
Corporate Income Tax	30.0%
Total cost of debt capital	**6.4%**
Capital structure	
Equity	86%
Debt capital (D/(D+E))	14%
Weighted average cost of capital (WACC)	**13.9%**
TCO equity valuation separately, million USD (100%)	
(=) Value in the forecast period	50,375
(=) EV	**50,375**
(+) Cash and deposits with banks	768
(–) Debt (incl. operating lease)	7,038
(=) Equity value	**44,105**
(=) TCO valuation, billion KZT (100%)	**20,950**
(x)'KMG stake in TCO	20%
(=) TCO valuation, billion USD (20%)	**8.82**
(x)'Discount for lack of full control	15.4%
(=) TCO total value discounted, billion USD	**7.46**
(=) TCO total value discounted, billion KZT	**3,543**

Freedom Finance JSC calculations

Illus. 4. KMG Kashagan equity valuation model using the DCF method

Revenue model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2076	2077
Oil production (thousand tons) (KMG share)	2,688	2,404	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Oil prices, $/barrel	71	99	97	89	88	82	75	75	68	68
Oil prices, $/ton	533	744	726	669	662	613	564	564	511	511
Oil sales price, $/ton	530	731	709	646	637	598	549	548	497	497
Revenue segments										
Crude oil sales	607	812	1,076	1,040	1,092	1,099	1,008	1,006	912	912
Sulfur sales	14	21	26	23	26	26	24	23	21	21
Gas sales	7.8	18	26	29	24	26	25	25	22	22
Revenue	628	852	1,129	1,091	1,142	1,152	1,056	1,054	956	956
growth rate, %		*35.6%*	*32.5%*	*-3.4%*	*4.7%*	*0.9%*	*-8.3%*	*-0.2%*		*0.0%*

Operating cost model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2076	2077
Cost net of depreciation	59	67	94	105	116	127	140	154	201	201
Administrative expenses net of depreciation	2.0	2.3	2.7	2.9	3.3	3.6	3.9	4.3	51.7	53.8
Sales costs	54	47	66	74	81	90	99	108	141	141
Other operating income/expenses	0.9	1.3	1.7	1.6	1.7	1.7	1.6	1.6	1.4	1.4
Estimated taxes	-	-	-	-	-	-	-	-	184	184
Total operating expenses	116	117	165	183	202	222	244	268	579	581

Forecast period model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2076	2077
EBITDA	512	734	964	908	940	930	812	786	377	375
EBITDA margin	82%	86%	85%	83%	82%	81%	77%	75%	39%	39%
EBIT	311	532	759	702	732	720	607	579	226	219
Operating profit margin	49%	62%	67%	64%	64%	62%	57%	55%	24%	23%
(−) Tax on EBIT		160	228	211	220	216	182	174	68	66
(=) NOPAT		373	532	491	512	504	425	405	158	154
(−) net reinvestment (including D&A)		(149)	(124)	(166)	(157)	(161)	(166)	(158)	(33)	(144)
Capex		29	39	41	42	44	45	46	118	121
WC adj.		24	41	(1)	9	5	(6)	4	(1)	(109)
DD&A		202	204	206	208	210	205	208	151	155
(=) FCFF		521	656	658	669	665	591	563	192	298
(x) discount factor		0.94x	0.82x	0.72x	0.64x	0.56x	0.49x	0.43x	0.00x	0.00x
PV FCF		489	541	477	426	373	291	244	0.2	0.2

WACC calculation	
Cost of equity	
Risk-free rate	4.2%
Market equity premium	7.2%
Calculated Beta	1.56
Total cost of equity	15.4%

Cost of debt capital	
Cost of debt capital (before taxes)	7.6%
Corporate Income Tax	30.0%
Total cost of debt capital	**5.3%**
Capital structure	
Equity	84%
Debt capital (D/(D+E))	16%
Weighted average cost of capital (WACC)	**13.7%**
KMG Kashagan equity valuation separately, billion KZT (100%)	
(=) Value in the forecast period	3,920
(=) EV	**3,920**
(+) Cash and deposits with banks	165
(–) Debt (incl. operating lease)	666
(=) Equity value	**3,418**
(=) KMG Kashagan valuation, billion USD (100%)	**7.20**
(x)'KMG stake in KMG Kashagan	100%
(=) KMG Kashagan valuation, billion USD (100%)	**7.20**
(x)'Discount for lack of full control	19.5%
(=) KMG Kashagan total value discounted, billion USD	**5.79**
(=) KMG Kashagan total value discounted, billion KZT	**2,751**

Freedom Finance JSC calculations

Illus. 5. Mangistaumunaigaz (MMG) equity valuation model using the DCF method

Revenue model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2036	2037
Oil production (thousand tons) (KMG share)	2,944	2,949	3,073	3,073	3,073	3,073	3,073	3,073	600	0
Oil production (thousand tons) (100%)	5,888	5,898	6,146	6,146	6,146	6,146	6,146	6,146	1,200	0
Oil prices, $/barrel	71	99	97	89	88	82	75	75	70	68
Oil prices, $/ton	533	744	726	669	662	613	564	564	526	511
Oil sales price, $/ton	486	677	659	607	599	554	509	509	470	455
Revenue segments										
Crude oil for export	547	922	980	971	1,014	1,009	926	925	-	-
Crude oil for domestic market	203	318	332	324	348	348	325	328	126	-
Gas sales	10	17	18	17	18	18	17	17	2	-
Other	3	4	4	4	4	4	4	4	0	-
Revenue	763	1,261	1,335	1,317	1,384	1,380	1,271	1,274	128	0
growth rate, %		*65.3%*	*5.8%*	*-1.3%*	*5.1%*	*-0.3%*	*-7.9%*	*0.2%*		*-100.0%*

Operating cost model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2036	2037
Cost of oil	129	147	171	188	206	224	244	265	92	-
Cost of gas	2.7	5.1	6.0	6.4	7.3	7.8	7.7	8.3	1.3	-
Other	12	13	15	17	18	19	21	22	7	-
Net administrative expenses	18	19	19	19	19	19	19	20	4	-
Transportation and distribution costs	242	598	638	586	611	612	542	542	17	-
Total operating expenses	404	781	849	817	861	882	834	858	121	0

Forecast period model, billion KZT	FY2021	2022	2023	2024	2025	2026	2027	2028	2036	2037
EBITDA	299	480	485	500	523	497	437	416	7	0
EBITDA margin	39%	38%	36%	38%	38%	36%	34%	33%	6%	0%
EBIT	232	404	398	402	415	379	310	337	-125	-132
Operating profit margin	30%	32%	30%	31%	30%	27%	24%	26%	-97%	0%
(−) Tax on EBIT		81	80	80	83	76	62	67	0	0
(=) NOPAT		323	318	322	332	303	248	270	(125)	(132)
(−) net reinvestment (including D&A)		46	35	23	22	9	(14)	38	(21)	(99)
Capex		121	129	127	134	134	124	125	13	0
WC adj.		1.4	(6.0)	(6.1)	(3.7)	(6.6)	(10.9)	(7.6)	98.0	32.7
DD&A		76	87	98	108	118	127	79	132	132
(=) FCFF		276	283	298	310	294	262	232	(104)	(33)
(x) discount factor		0.91x	0.76x	0.64x	0.53x	0.45x	0.37x	0.31x	0.07x	0.06x
PV FCF		253	216	190	165	131	97	72	(8)	(2)

WACC calculation	
Cost of equity	
Risk-free rate	9.9%
Market equity premium	7.2%
Calculated Beta	1.37
Total cost of equity	**19.7%**
Cost of debt capital	
Cost of debt capital (before taxes)	8.0%
Corporate Income Tax	20.0%
Total cost of debt capital	**8.0%**
Capital structure	
Equity	100%
Debt capital (D/(D+E))	0%
Weighted average cost of capital (WACC)	**19.7%**
MMG equity valuation separately, billion KZT (100%)	
(=) Value in the forecast period	1,308
(=) EV	**1,308**
(+) Cash and deposits with banks	33
(−) Debt (incl. operating lease)	0
(=) Equity value	**1,341**
(=) MMG Value, billion USD (100%)	**2.82**
(x)'KMG stake in MMG	50%
(=) MMG Value, billion USD (50%)	**1.41**
(x)'Discount for lack of full control	11.7%
(=) MMG total value discounted, billion USD	**1.25**
(=) MMG total value discounted, billion KZT	**592**

Freedom Finance JSC calculations

FREEDOM BROKER

Illus. 6. Caspian Pipeline Consortium-Kazakhstan (CPC-K) equity valuation model using the DCF method

Revenue model, billion KZT	2021A	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Terminal period
Oil transportation including share (million tons)	12.6	12.9	13.5	14.9	16.3	16.3	16.3	16.3	16.3	16.3	16.3	16.3
Oil transportation (100%) (million tons)	60.7	61.9	65.0	71.8	78.7	78.7	78.7	78.7	78.6	78.6	78.6	78.6
Transportation by subsoil users												
TCO	26.6	28.7	28.0	34.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
Kashagan	15.9	14.2	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Karachaganak	10.3	11.0	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8	10.8
Revenue	185	205	235	276	322	345	345	345	345	345	345	345
growth rate, %		*10.7%*	*14.7%*	*17.2%*	*16.7%*	*7.2%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*

Operating cost model, billion KZT	FY2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Terminal period
Costs net of depreciation	21	25	29	36	44	48	53	58	63	69	76	82
Administrative expenses net of depreciation	13	15	18	22	26	29	32	35	38	42	46	49
Other expenses	16	9	12	15	19	18	18	19	19	18	18	18
Total operating expenses	49	48	59	72	88	95	103	111	120	129	139	150

Forecast period model, billion KZT	FY2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Terminal period
EBITDA	136	157	176	203	233	250	242	233	224	215	205	194
EBITDA margin	73%	76%	75%	74%	73%	73%	70%	68%	65%	62%	60%	56%
EBIT	89	106	120	142	168	181	173	162	150	138	125	114
Operating profit margin	48%	52%	51%	51%	52%	52%	50%	47%	43%	40%	36%	33%
(–) Tax on EBIT		21	24	28	34	36	35	32	30	28	25	23
(=) NOPAT		85	96	114	134	145	138	129	120	110	100	92
(–) net reinvestment (including D&A)		(19)	(21)	(23)	(23)	(25)	(27)	(32)	(38)	(43)	(49)	46
Capex		34	37	41	46	47	45	42	40	38	35	
WC adj.		(2)	(2)	(3)	(4)	(2)	(3)	(3)	(3)	(4)	(4)	
DD&A		51	56	61	65	70	69	72	75	77	80	
(=) FCFF		104	117	136	157	170	165	162	158	154	149	46
(x) discount factor		0.94x	0.82x	0.72x	0.63x	0.56x	0.49x	0.43x	0.38x	0.33x	0.29x	
PV FCF		97	97	99	100	94	81	69	60	51	43	

WACC calculation	
Cost of equity	
Risk-free rate	4.2%
Market equity premium	12.7%
Calculated Beta	0.81
Total cost of equity	**14.6%**
Cost of debt capital	
Cost of debt capital (before taxes)	8.0%
Corporate Income Tax	20.0%
Total cost of debt capital	**6.4%**

Capital structure	
Equity	92%
Debt capital (D/(D+E))	8%
Weighted average cost of capital (WACC)	**13.9%**
CPC-K equity valuation separately, billion KZT (100%)	
(=) Value in the forecast period	791
(=) Value in the terminal period	112
(=) EV	**791**
(+) Cash and deposits with banks	43
(–) Debt (incl. operating lease)	79
(=) Equity value	**867**
(=) CPC-K valuation, billion USD (100%)	**1.83**
(x) KMG stake in CPC-K	100%
(=) CPC-K valuation, billion USD (100%)	**1.83**
(x)'Discount for lack of full control	19.5%
(=) CPC-K total value discounted, billion USD	**1.47**
(=) CPC-K total value discounted, billion KZT	**698**

Freedom Finance JSC calculations

Potential Risks to the Valuation Model

Oil prices. It is known that oil prices are quite volatile and, therefore, may have a strong impact on the Group's financial performance. A decrease in the price may also affect dividends, as in this case EBITDA decreases and the net debt / EBITDA ratio increases, which leads to a decrease in payments according to the dividend policy.

CPC oil pipeline. The CPC oil pipeline is the main export destination for Kazakh oil. During 2022, there were several shutdowns thereof. Moreover, sanctions against the Russian Federation may cause difficulties to the oil pipeline operator in repair and maintenance of equipment.

Geopolitical factors. After the start of the military conflict between Russia and Ukraine, the countries of Europe and the United States began to refuse oil of Russian origin. This led to a significant discount in the price of Urals to Brent. In addition, since a small part of the oil transported through the CPC is of Russian origin, the price of CPC Blend crude is now also trading at a slight discount. In the current environment, the risk of tougher sanctions and a complete ban on oil transportation through the CPC remains.

Social company. Since KazMunayGas is a national company and controlled by the government, there are potential risks for shareholders due to the “excessive” social orientation of the Group. This can be expressed through higher staff wage growth, low oil products and crude oil selling prices for local refineries.