

Overview of strategic trends and developments
in Caspian oil & gas sector investment;
Caspian oil and gas export potential
and Southern Corridors

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2. Export potential of the region
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4. Geopolitical challenges

Azerbaijan energy sector. Oil production, consumption and reserves

	1991	2000	2006	2006, share of world total, %
Oil production, million tonnes	12.5	14.1	32.5	0.8
Domestic oil consumption, million tonnes	8.5	6.3	4.7	0.1
Proven reserves, billion tonnes			1.0	0.6

Source: BP (2007)

Azerbaijan energy sector. Gas production, consumption and reserves

	1991	2000	2006	2006, share of total, %
Gas production, bcm	9.2	5.3	6.3	0.2
Domestic gas consumption, bcm	15.8	5.4	9.6	0.3
Proven reserves, trillion cubic metres	-	-	1.35	0.7

Source: BP (2007)

Azerbaijan energy sector.

Key players

Oil and gas extraction and export:

- State Oil Company of the Azerbaijan Republic (SOCAR);
- British Petroleum (BP) and other foreign oil companies (Statoil, ExxonMobil, TotalFinaElf, Lukoil, Itochu and others) that are contractors in PSAs signed by the government;

Oil and gas processing:

- State Oil Company of the Azerbaijan Republic (SOCAR);

The sale of oil products on the domestic market:

- State Oil Company of the Azerbaijan Republic (SOCAR);
- Azpetrol (private company);
- ABU Petrol (private company)

Azerbaijan energy sector.

Key players

Power generation and distribution:

- Azerenergy JSC – a producer and distributor of electricity (100 per cent of shares belong to the state)

Natural gas distribution:

- Azerigas JSC – a gas distributing company (100 per cent of shares belong to the state)

Azerbaijan energy sector. SWOT Analysis

Strengths:

- Existence of oil and gas reserves (availability for at least 25 years within current development of reserves)
- Common border with countries that possess considerable energy reserves: Russia, Iran, Kazakhstan and Turkmenistan
- Location as a transit country
- Availability of regional oil and gas pipeline
- Established gas transmission network
- Refining capacity

Azerbaijan energy sector. SWOT Analysis

Weaknesses:

- Physical obsolescence of electricity and gas transmission networks
- Limited gas storage
- A weak legislative and regulatory framework
- The unresolved status of the Caspian Sea with Iran and Turkmenistan

Azerbaijan energy sector. SWOT Analysis

Opportunities:

- Increased production of domestic resources (oil and gas)
- Expansion of the transit infrastructure
- Increasing volumes of the transit of Central Asian hydrocarbon reserves

Azerbaijan energy sector. SWOT Analysis

Threats:

- Pressures on fiscal revenue streams as a result of explicit and implicit subsidies
- The country's transformation from an exporter of energy resources into an importer (in 25-30 years)
- Proximity to conflict zones and terrorist threats
- Dutch disease – potential problems of non-energy sectors of the economy

Kazakhstan energy sector. Oil production, consumption and reserves

	1991	2000	2006	2006, share of world total, %
Oil production, million tonnes	26.6	35.3	66.1	1.7
Domestic oil consumption, million tonnes	21.7	7.4	10.6	0.3
Proven reserves, billion tonnes			5.5	3.3

Source: BP (2007)

Kazakhstan energy sector. Gas production, consumption and reserves

	1991	2000	2006	2006, share of total, %
Gas production, bcm	7.4	10.8	23.9	0.8
Domestic gas consumption, bcm	13.2	9.7	20.2	0.7
Proven reserves, trillion cubic metres	-	-	3.0	1.7

Source: BP (2007)

Kazakhstan energy sector.

Key players

The extraction of oil and gas:

The leading companies in this sector are:

- KazMunayGaz (14.7% of the total oil production in 2006) – a state-owned company with stakes in virtually all major oil and gas projects in country,
- Karachaganak Petroleum Operating BV (16% of the total oil production in 2006),
- Tengizchevroil (20.5% of the total oil production in 2006).

These companies' production is roughly two thirds of total oil extraction. Other players are PetroKazakhstan Ink, the Kazgermunay joint venture and KazMunayTeniz.

Kazakhstan energy sector.

Key players

Oil and gas processing

The oil refineries: Atirau, Pavlodar and Shymkent. In 2006, the volume of oil processing at these factories totaled 3.731 million tons, 3.897 million tons and 4.035 million tons respectively.

The first two factories are run by KazMunayGaz and the third one is owned and run by PetroKazakhstan.

There are also three gas refineries in Kazakhstan: the Kazakh gas refinery in Novy Uzen, the Zhanazhol gas refinery and the Tengiz gas refinery.

Kazakhstan energy sector.

Key players

Power generation:

The national electricity system (NES) represented by:

- the joint-stock company – the Kazakhstan Electricity Grid Operating Company (KEGOC). It has been formed on the basis of interstate and inter-regional power grids 220-500-1,150 kW.;
- regional power companies (RPC) that include power distributing networks of 110 kW and below and distribute electricity at the regional level;
- power generators – power stations that are independent or integrated with major industrial facilities.

The largest power generator is the AES corporation (USA) which owns the former Ekibastuz State District Power Station-1 (AES Ekibastuz) that generates 20% of all power in the country.

Kazakhstan energy sector.

Key players

Coal extraction:

The largest coal manufacturers are:

- “Bogatyr Access Komyr” (established by american Access Industries in 1996),
- the Eurasian Energy Corporation (owned by Eurasian Group, one of the largest kazakh financial-industrial groups),
- “Ispat-Karmet” (countries biggest steel producer, the other important investor in KZ coal sector is Mittal Steel),
- the Kazakhmys corporation
- Maykuben West.

These five companies extract 88% of coal in the country

Kazakhstan energy sector. Key players

Uranium production:

The leading manufacturer is state-owned Kazatomprom and its joint ventures – the Katko joint venture with the French company Cogema and the “Inkay” joint venture with the Canadian company Cameco. A joint venture has been set up with the Russian Ministry of Atomic Energy to exploit the Zarechnoye deposit.

Kazakhstan energy sector. SWOT Analysis

Strengths:

- Considerable oil and gas as well as coal and uranium reserves
- The country's location as a transit route for hydrocarbon reserves from neighboring Turkmenistan and Uzbekistan
- Geographical proximity to growing energy markets (China)

Kazakhstan energy sector. SWOT Analysis

Weaknesses:

- Distance to markets in Western Europe
- The diversification of exports requires cooperation of neighboring transit countries (Russia and Azerbaijan)
- The physical obsolescence of power and gas networks

Kazakhstan energy sector. SWOT Analysis

Opportunities:

- Increased production of oil and gas
- Diversification of the export routes of hydrocarbon resources
- Interest on the side of EU and other oil and gas consumers to diversify resource imports limiting the dependence on Middle East/Russia
- Regional cooperation in energy sphere (with Kazakhstan as a leader)
- Favourable economic situation in Kazakhstan
- Modernization of Kazakh downstream
- Development of non-oil sectors of economy
- Increasing transit revenues
- The development of nuclear energy and diversification energy supplying of the country

Kazakhstan energy sector. SWOT Analysis

Threats:

- Unfavourable economic terms of oil and gas transit contracts with Russia
- Dutch disease – potential problems of non-energy sectors of the economy

Turkmenistan energy sector. Oil production, consumption and reserves

	2000	2006	2006, share of world total, %
Oil production, million tonnes	7.2	8.1	0.2
Domestic oil consumption, million tonnes	3.6	5.2	0.1
Proven reserves, billion tonnes	-	0.1	< 0.05

Source: BP (2007)

Turkmenistan energy sector. Gas production, consumption and reserves

	2000	2006	2006, share of total, %
Gas production, bcm	43.8	62.2	2.2
Domestic gas consumption, bcm	12.6	18.9	0.7
Proven reserves, trillion cubic metres	-	2.86	1.6

Source: BP (2007)

Turkmenistan energy sector.

Key players

The leading companies in the oil and gas sector are Turkmenneft (oil), Turkmengaz (gas), Turkmenneftgaz (oil processing, transportation and sale) and Turkmengeologia (geological exploration) which belong to the state.

The role of foreign companies in oil and gas sector does not exceed 10 per cent. These companies are Petronas (Malaysia), Maersk Oil (Denmark), Burren Energy (Britain), Mitro International (Austria), Dragon Oil (UAE-Britain), China's CNPC and others.

Turkmenistan energy sector. SWOT Analysis

Strengths:

- The presence of considerable gas reserves which make it possible to export large amounts of gas;
- The presence of oil reserves which make it possible to meet the country's demand and also export oil and oil products in small quantities;
- The presence of two export gas pipelines

Turkmenistan energy sector. SWOT Analysis

Weaknesses:

- Remoteness from the foreign gas market. Neighboring countries are either rich in gas themselves or are insolvent and high-risk countries;
- The lack of a diversified system of export gas pipelines
- The physical obsolescence of the infrastructure
- Bad investment climate
- Investors will need time to clarify the new rules of the game in connection with the change in the country's leadership

Turkmenistan energy sector. SWOT Analysis

Opportunities:

- Increased production of domestic resources (oil and gas)
- Diversification of export
- The expansion / creation of the transit infrastructure

Turkmenistan energy sector. SWOT Analysis

Threats:

- Disadvantageous conditions for gas transit through Russian territory as Russia has almost a monopolistic role in the transit of Turkmen gas
- Persistence of disputes / conflicts with neighbouring countries (e.g. with Azerbaijan on offshore fields and Caspian status)
- Dutch disease – potential problems of non-energy sectors of the economy

Uzbekistan energy sector. Oil production, consumption and reserves

	1991	2000	2006	2006, share of world total, %
Oil production, million tonnes	2.8	7.5	5.4	0.1
Domestic oil consumption, million tonnes	12.6	6.7	6.9	0.2
Proven reserves, billion tonnes	-	-	0.1	< 0.05

Source: BP (2007)

Uzbekistan energy sector. Gas production, consumption and reserves

	1991	2000	2006	2006, share of total, %
Gas production, bcm	38.1	52.6	55.4	1.9
Domestic gas consumption, bcm	36.8	47.1	43.2	1.5
Proven reserves, trillion cubic metres	-	-	1.87	1.0

Source: BP (2007)

Uzbekistan energy sector.

Key players

- *The national holding company Uzbekneftgaz is one of the major manufacturers of fuel and energy resources in Central Asia and provides more than 60 billion cubic meters of natural gas extraction and about 7 million tons of liquid hydrocarbon reserves per year.*
- *The Uzgeoburneftegazdobycha joint-stock company (Uzbekneftgaz subsidiary) carries out exploratory and exploitation drilling of oil and gas wells*
- *The Uztransgaz joint-stock company (Uzbekneftgaz subsidiary) keeps gas in underground storages, manages natural gas transportation to domestic consumers and exports gas abroad.*
- *The Uzneftprodukt joint-stock company (Uzbekneftgaz subsidiary) manages the assets of the Fergana, Altyaryk and Bukhara oil refineries*
- *The Uzbekenergo state joint-stock company generates and distributes electricity.*
- *The Uzbekugol joint-stock company is a leading manufacturer of coal in the country. It is part of Uzbekenergo.*
- *The Navoi mining and metallurgical combine is a manufacturer of uranium.*

Uzbekistan energy sector. SWOT Analysis

Strengths:

- The presence of considerable gas, coal and uranium ore reserves
- The presence of considerable generating electricity capacities

Uzbekistan energy sector. SWOT Analysis

Weaknesses:

- Transit dependancy on neighbouring countries
- The physical obsolescence of power and gas networks and high losses
- The low level of the diversification of energy sources and almost absolute dependence on gas

Uzbekistan energy sector. SWOT Analysis

Opportunities:

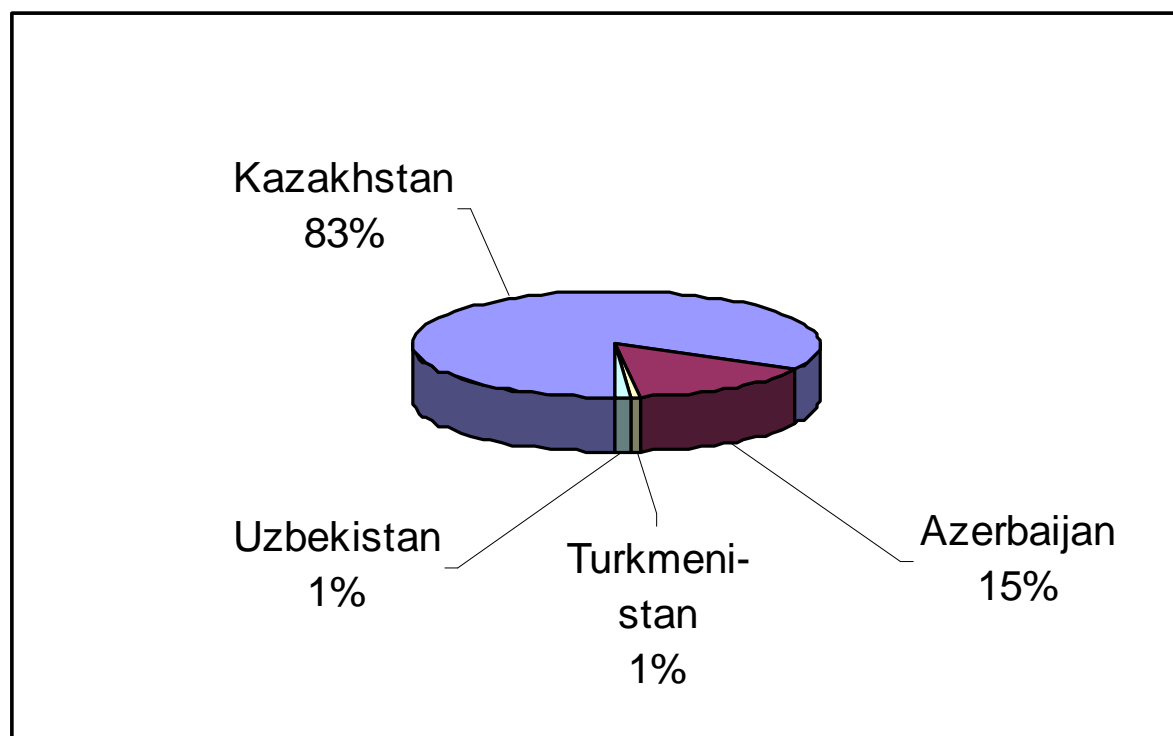
- Increased production of gas
- The development of nuclear energy
- Increased trade with big Asian markets

Uzbekistan energy sector. SWOT Analysis

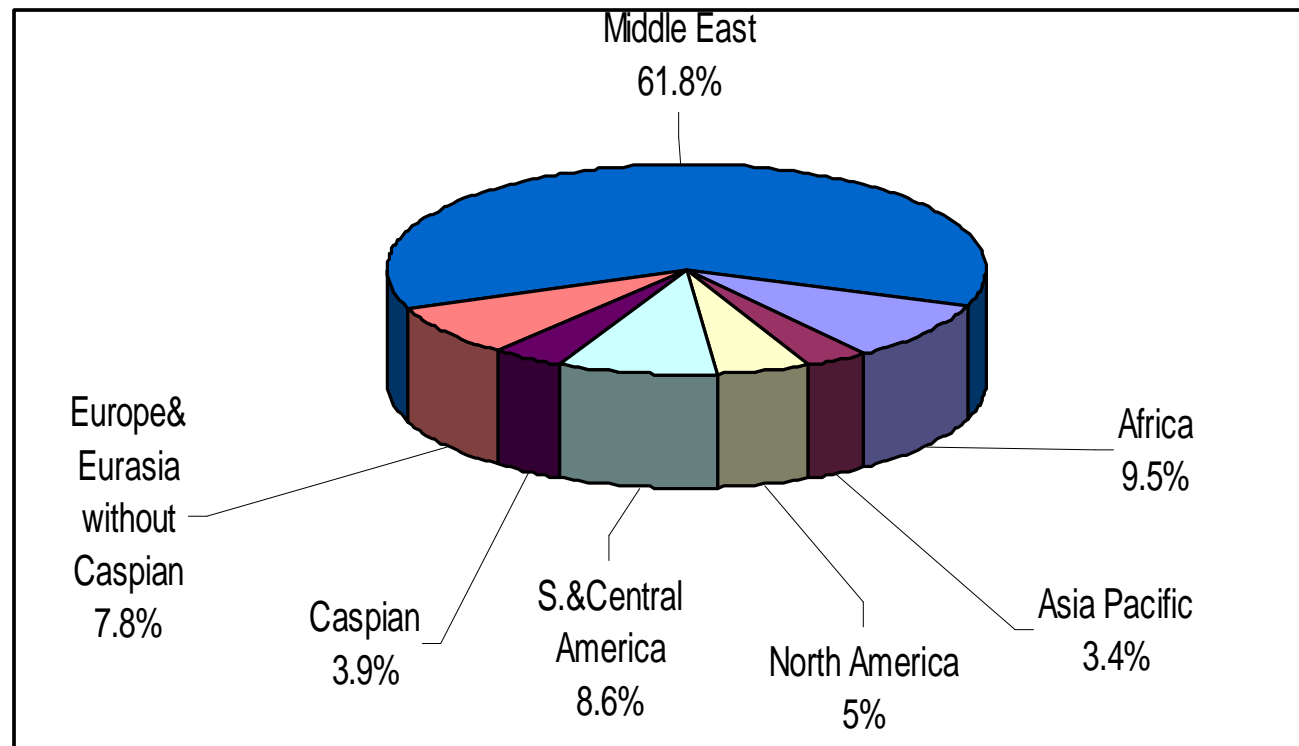
Threats:

- Unfavorable transit conditions and prices offered by Russia to export Uzbek gas
- Difficulties of diversifying export in connection with agreements signed with Russia
- The low level of foreign investors' interest due to delays in the democratization of the country

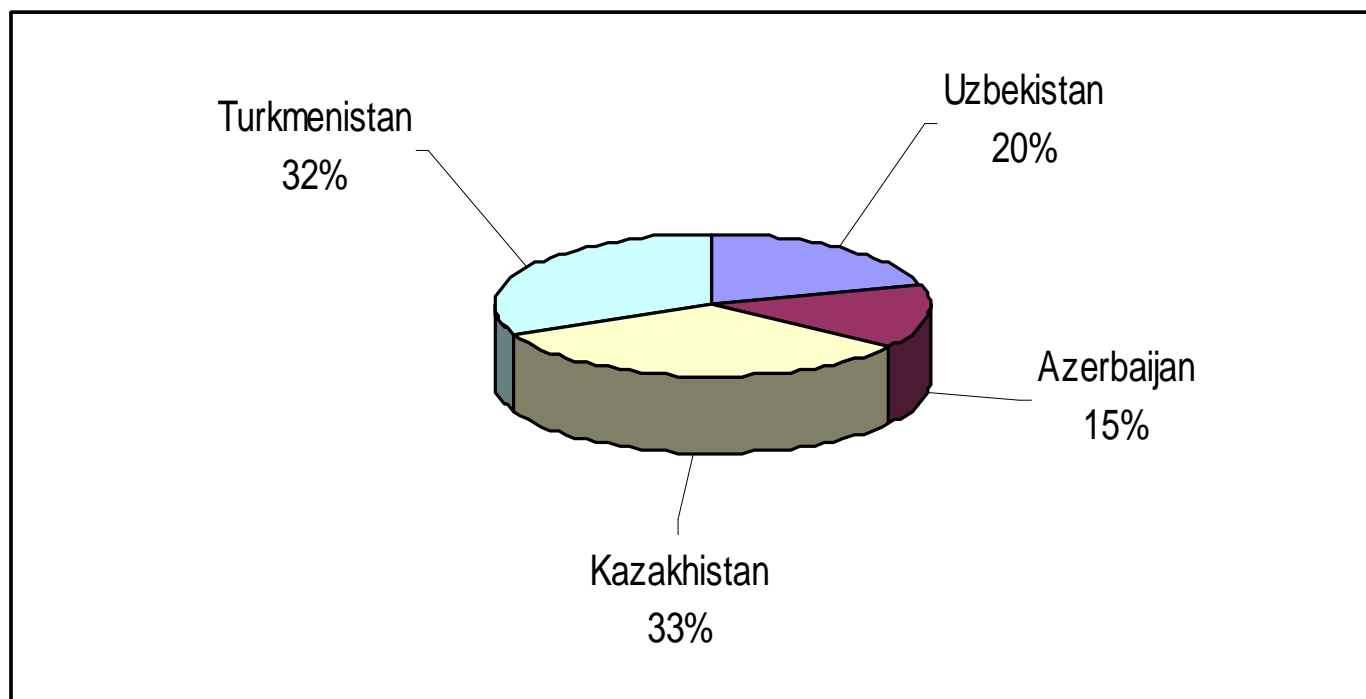
Regional distribution of proven oil reserves



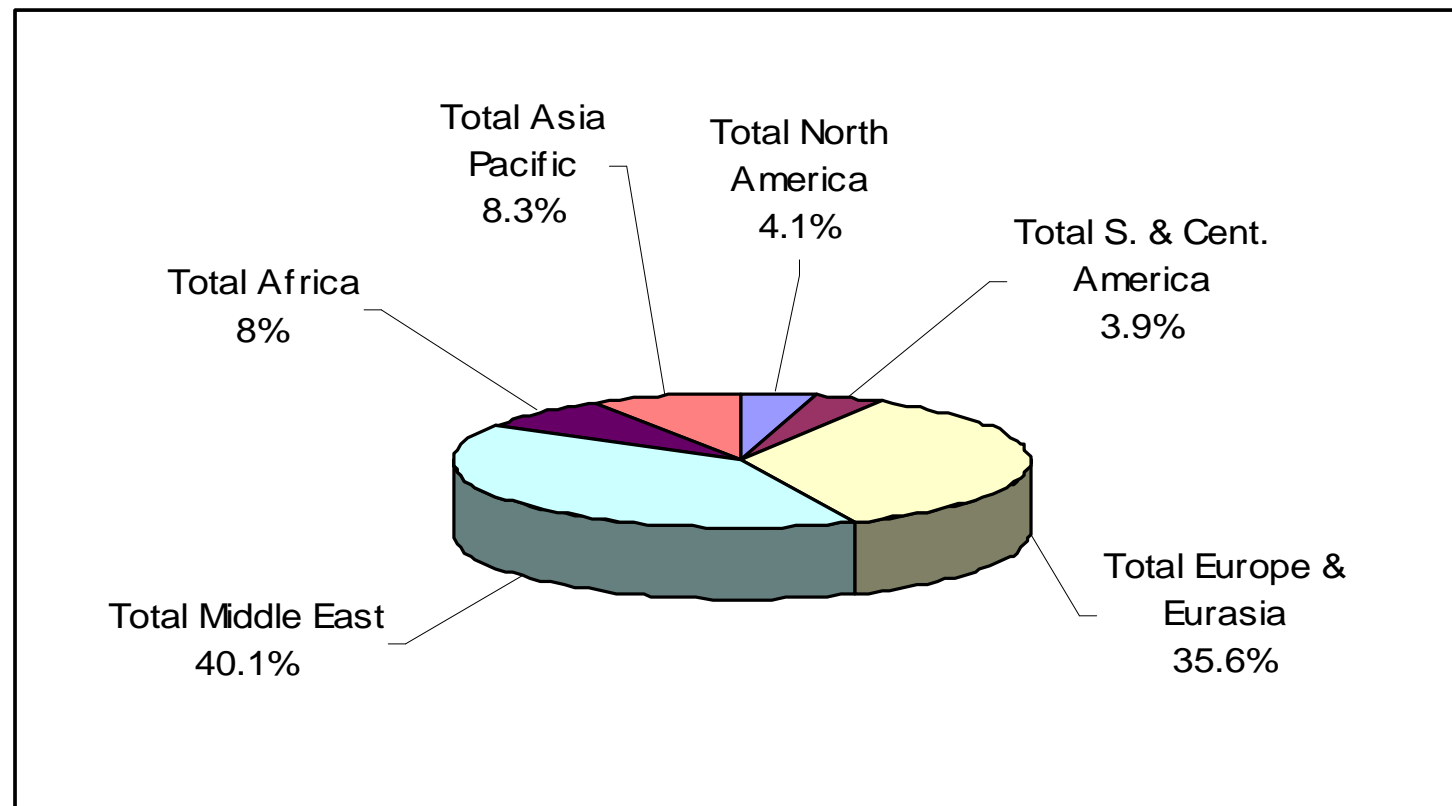
Global distribution of proven oil reserves



Regional distribution of proven gas reserves



Global distribution of proven gas reserves



Caspian region. Oil Pipelines

Export pipelines in operation:

- Baku (Azerbaijan) – Tbilisi (Georgia) – Ceyhan (Turkey);
- Baku (Azerbaijan) – Novorossiysk (Russia);
- Baku (Azerbaijan) – Supsa (Georgia);
- Atirau (Kazakhstan) – Samara (Russia);
- Tengiz (Kazakhstan) – Novorossiysk (Russia);
- Shimkent (Kazakhstan) – Charjo (Turkmenistan through Uzbekistan);
- Atasu (North-West Kazakhstan) – Alashkanou (Xinjiang, China);
- Neka (Iran) – Tehran (Iran).

Caspian region. Oil Pipelines

	Throughput capacity, '000 bpd	Length, km
Baku – Tbilisi – Ceyhan	1000	1768
Baku – Novorossiysk	115	1475
Baku – Supsa	115	837
Atirau – Samara	300	697
Tengiz – Novorossiysk	560 (1 st line)	1510
Shimkent – Charjo	140	
Atasu - Alashankou	200 (initial), 400 (budgeted)	960
Neka - Tehran	175	350

Caspian region. Gas Pipelines

The existing gas pipelines:

- Central Asia - Centre (CAC);
- Korpeje-Kort-Kuy (KKK);
- Tashkent-Bishkek-Almaty (TBA);
- Baku-Tbilisi-Erzurum (BTE) or the South Caucasus Pipeline (SCP).

The planned gas pipelines:

- Trans-Caspian Gas Pipeline (TCGP);
- Trans-Afghan route (TAF);
- **Atasu (Kazakhstan) - Alashankou (China)** - pipeline currently being built;
- Turkmenistan - Ukraine;
- Turkmenistan - China;
- Turkmenistan - EU.



Thank you for the attention