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Azerbaijan Energy Profile

International Energy Agency

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Overview

Country overview

Situated in the southern Caucasus region, Azerbaijan is bordered by the Caspian Sea to the east, Armenia and Georgia to the west, the Russian Federation (hereafter, “Russia”) to the north, and the Islamic Republic of Iran (hereafter, “Iran”) to the south. Its population of 10.1 million occupies approximately 86 600 square kilometres, with Baku being the capital and largest city.

Azerbaijan has undergone significant economic transformation since gaining independence in 1991, with its large oil and gas reserves driving strong growth in the 1990s and 2000s. However, its heavy dependence on extractive industries has left Azerbaijan exposed to the negative effects of oil price volatility.

From 2013 to 2017, growth in gross domestic product (GDP) averaged 1.4% per year, down from 5.5% during 2008 to 2012. The country’s hydrocarbon sector was responsible for the bulk of the decline, as it contributes roughly one-third of GDP and makes up over 90% of total exports. The 2014 downturn in global oil prices and the ensuing decline in oil production pushed this contraction. Furthermore, the oil price drop also led to lower remittances from Azerbaijan’s hydrocarbon-rich trading partners.

Nevertheless, Azerbaijan’s economic growth recovered quickly after being severely hit by the Covid-19 pandemic, which caused the country’s economy to contract 4.3% in 2021 (5.6% according to the government). Strong performance in manufacturing, transportation, retail trade, and information and communications technologies supported recovery, and growth also continues to rebound in services, including the hospitality sector.

Oil and gas make up more than 90% of Azerbaijan’s exports, with production increasing considerably in the 2000s following discovery of the Shah Deniz gas field, to reach record levels in 2010. The government and international companies have invested substantially in the energy sector, and the construction of several new power plants as well as rehabilitation and modernisation of the gas and electricity networks have improved reliability and security of supply.

Azerbaijan’s renewable energy development potential is considerable. The country has excellent solar and wind resources and significant biomass, geothermal and hydropower prospects. Practical deployment has been limited, however, considering the scale of available resources and the country’s long-term ambitions.

Renewables also offer the most promising low-carbon solution to meet Azerbaijan's climate targets. The country has committed to reduce its greenhouse gas (GHG) emissions 35% by 2030 from the 1990 base year set in its nationally determined contribution (NDC) under the Paris Agreement, which emphasises the use of alternative and renewable energy sources to achieve this target.

Despite widespread privatisation of the economy since the country gained its independence, Azerbaijan's energy sector remains predominantly government owned. Only a handful of small hydropower plants are in private ownership, and they account for less than 1% of electricity generation.

Azerbaijan's annual oil, natural gas and electricity production

Energy source	Unit	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Oil (including NGLs)	Mt	50.9	45.7	43.4	43.5	42.1	41.7	41.1	38.7	38.8	37.5		
Natural gas (marketable)	bcm	16.7	16.3	17.7	18.3	19.3	19.2	18.7	18.2	19.2	24.5	26.4	32.6
Electricity	TWh	18.7	20.3	23.0	23.4	24.7	24.7	25.0	24.3	25.2	26.1	25.8	27.8

Notes: NGLs = natural gas liquids. Mt = million tonnes. bcm = billion cubic metres. TWh = terawatt hours.
Source: IEA analysis (2023) based on data provided by the State Statistical Committee of the Republic of Azerbaijan (SSC).

Key energy data

Supply

- Azerbaijan's energy demand (measured as total energy supply [TES]) was 16.1 million tonnes of oil equivalent (Mtoe) in 2022 (according to preliminary data from the State Statistical Committee).
- Azerbaijan is a major producer of crude oil (32.7 Mt including natural gas liquids in 2022) and of natural gas (35.0 bcm in 2022).
- Because of its considerable hydrocarbon production, Azerbaijan has one of the world's highest energy self-sufficiency ratios, with production exceeding demand almost four times.
- Electricity generation in Azerbaijan has increased by more than 50% since 2010, amounting to 29.0 TWh in 2022. It is mostly generated by natural gas (more than 90% in 2022).
- Azerbaijan's sole refinery produced around 6.5 Mt of oil products from domestic crude oil and natural gas liquids in 2022.

Import and export

- Azerbaijan is also a major exporter of crude oil (26.6 Mt in 2022) and natural gas (22.6 bcm in 2022).

Demand

- In 2021, Azerbaijan's total final consumption (TFC) (excluding the transformation sector) was 11.5 Mtoe.
- The residential sector has the largest final consumption (4.1 Mtoe in 2021).
- Transport is the second-largest final energy consumer (2.6 Mtoe in 2021). Most oil products used in the transport sector are produced in Azerbaijan.
- TFC consists mainly of natural gas (43%) and oil products (39%), followed by electricity (15%).

Renewables

- Renewable energy sources, including hydro, contributed 1.5% to total energy supply in 2022 and 6% (1.8 TWh) to electricity supply.

Energy sector governance

The Presidential Administration, the Cabinet of Ministers and the Ministry of Energy (MoE) are the energy sector's main government institutions, while individual subsectors are controlled by several state-owned monopolies, including SOCAR (oil refining, natural gas distribution and supply [State Oil Company of the Republic of Azerbaijan]), Azerenergy/Azerenerji (electricity generation and transmission), Azerishiq (electricity distribution and supply) and Azeristiliktejhizat (district heating).

Executive

The **President of the Republic of Azerbaijan** holds executive power and assembles a **Cabinet of Ministers** to organise the work of the executive authorities. The Cabinet of Ministers is a superior executive body accountable directly to the president.

The **Ministry of Energy** is the central executive authority responsible for implementing state policy and the various regulations, orders and decrees issued by the government for the energy sector. The ministry board, approved by the Cabinet of Ministers, has the authority to issue orders within its scope of competence, meaning most areas within the energy sector except tariff regulation, which is under the jurisdiction of the Tariff Council.

The **Tariff (Price) Council** is the collegial executive body designated to determine retail and wholesale tariffs for electricity, gas, district heat and refined petroleum products, as well as purchase tariffs for renewable electricity. Decree No. 341 of December 2005, the Statute on the Tariff (Price) Council of the Azerbaijan Republic, confirmed its creation to meet the requirements of Decree No. 242 of May 2005 on Strengthening of Anti-inflationary Measures in the Azerbaijan Republic (Clause 4.2). The Minister of Economy is the chairman of the Tariff (Price) Council, and council members are the deputy ministers of Finance, Justice, Energy, Transport, Communications and Information Technologies, Agriculture, Health, Education, Labour, and Social Defence of the People; the vice-chairmen of the committees of Customs, and of State City Building and Architecture; and the deputy chairman of the State Tax Service.

In 2017, the President of Azerbaijan signed a decree establishing the **Energy Regulatory Agency** under the Ministry of Energy to regulate relationships among producers, suppliers and transmission system operators and distributors, as well as customers in the field of electricity, heat and gas supply. The agency's main activities include state supervision of quality control and analysis, and the introduction of incentives to attract investment. Eventually, after the draft Law on the Regulator has been approved, all functions related to calculating and approving energy tariffs will be transferred from the Tariff Council to the Agency.

The **Ministry of Ecology and Natural Resources,** a central executive body implementing state policy on environmental protection, organises the effective use and rehabilitation of natural resources. The ministry ensures environmental safety, taking measures to avert any possible damage to natural ecological systems from economic or other activities.

The former **State Agency on Alternative and Renewable Energy Sources (SAARES)** was established by presidential decree on 16 July 2009 and was subsequently tasked with driving development of the country's renewable energy resources and related projects. The agency's status was altered by Presidential Decree No. 464 of 14 January 2019, making it part of the Ministry of Energy and transferring some of its activities. In September 2020, the President of Azerbaijan signed a decree establishing the Azerbaijan Renewable Energy Agency (AREA), reporting to the Ministry of Energy.

Legislative

The Azerbaijani legal system is based on civil law. The Constitution carries the greatest legal weight in the country and is the foundation of the legislative system, which consists of the following normative legal acts:

- the Constitution

- acts accepted by referendum
- laws
- orders
- decrees of the Cabinet of Ministers
- normative acts of central executive bodies.

International agreements to which Azerbaijan is a party constitute an integral part of the legislative system. When there is disagreement between normative legal acts (except within the Constitution and acts accepted by way of referendum) and international agreements to which Azerbaijan is a party, provisions of the international agreement take precedence.

The legislative body of Azerbaijan is the National Assembly (Milli Məclis in Azerbaijani), a unicameral parliament of 125 deputies appointed by direct election for a term of five years (citizens are eligible to vote at age 18 and to run for the National Assembly at 25). The most recent elections for the National Assembly were held in February 2020 after parliament was dissolved in December 2019.

Under the Constitution, those having the right to submit drafts of laws and other questions for consideration by the National Assembly are: deputies of the National Assembly, the President of Azerbaijan, the Supreme Court, citizens' groups presenting at least 40 000 signatures, the Prosecutor's Office and the National Assembly (Ali Majlis) of the Nakhichevan Autonomous Republic.

Drafts of laws are submitted to the president for signing within 14 days of their acceptance. If not specified otherwise in the law or by decree of the National Assembly, the law and decree become valid from the date of their publication.

A number of laws regulating oil and gas extraction have been adopted since Azerbaijan gained its independence:

- the Law on the Use of Energy Resources of May 1996
- the Law on Subsoil of February 1998
- the Law on Gas Supply of June 1998
- the Law on Energy of November 1998 (the Energy Law).

Two basic regulatory regimes apply to oil and gas exploration and production in Azerbaijan: the system established under the Law on Energy and implemented through energy contracts, and regimes particular to each case established by specific production sharing agreements (PSAs).

PSAs grant contractors the sole and exclusive right to conduct upstream oil and gas operations in the area specified in the PSA. PSAs also determine the participatory interests of the contractors and the specific conditions and terms

under which the operations must be conducted. They therefore typically define the warranties, general rights and obligations of the parties, the scope of the work, and the procedures and rules for managing and implementing oil and gas operations. Although the terms of PSAs vary, they usually last about 30 years. This period can be extended with SOCAR's consent.

Judiciary

Azerbaijan's juridical system comprises a Constitutional Court, a Supreme Court and a High Economic Court, as well as district and municipal courts invested with general jurisdiction, including over commercial disputes.

The Supreme Court is the highest judicial body in civil, criminal, administrative and other cases referred by the general courts, and exercises general control over the activities of first-instance courts. However, appeals for economic disputes go to the High Economic Court, which is the highest appellate body for such matters.

Under the 1992 Law on Foreign Investment, foreign investors have the right to international arbitration of commercial and investment disputes with Azerbaijani state authorities or other entities only if the parties have agreed to arbitration. Under this law, foreign states, their legal entities and citizens, and international organisations engaging in investment activities in Azerbaijan, are treated as foreign investors.

Azerbaijani law recognises the right of parties to refer a dispute to arbitration in another country or to a tribunal in Azerbaijan that will apply foreign law. The Law on International Arbitration of November 1999 (the International Arbitration Law) and the Civil Procedure Code of Azerbaijan, effective September 2000, govern the enforcement of awards issued by an international commercial arbitration tribunal and other related issues.

Additionally, in 1992 Azerbaijan acceded to the Washington Convention on the Settlement of Investment Disputes between States and Nationals of Other States, which provides for arbitration at the International Centre for Settlement of Investment Disputes. In 1996 the country acceded to the European Convention on Foreign Commercial Arbitration, and in 2000 it acceded to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards.

Regulatory framework

Azerbaijan does not have an independent energy regulator. In 2017, the President of Azerbaijan signed a decree to establish an Energy Regulatory Agency under the Ministry of Energy. The Ministry of Economy regulates licensing procedures, while tariffs are set by the Tariff (Price) Council, chaired by the Minister of Economy.

Under the Subsoil Law, no person or legal entity may engage in oil or gas exploration and production without a licence (i.e. an activity permit for a particular area). The law clarifies that a production licence must be issued for a particular subsoil block and is the ultimate deed granting subsoil use rights in that block.

An exploration licence can be issued for a term of up to five years, a production licence for up to 25 years, and a combined exploration and production licence for up to 30 years. An extension can be granted for a term agreed upon by the subsoil user and the licensing authority.

Unlike the Subsoil Law, the Energy Law grants production rights for a specified block exclusively on the basis of an energy contract. Notwithstanding the regimes set out in the Subsoil and Energy laws – and underlining the strategic importance of oil to the country – most major oil deals in Azerbaijan are approved by the country's legislature. In the absence of a PSA law and a law on petroleum, every oil deal in the form of a PSA – the main form of oil agreement in Azerbaijan – is considered to legally prevail over any conflicting law (arguably everything except the Constitution, acts adopted by public referenda and international agreements).

Tariffs

The Tariff (Price) Council establishes tariff methodology, reviews the tariffs proposed by regulated companies (including but not limited to energy) and proposes changes to the legal framework related to pricing. It is also responsible for settling disputes concerning price regulation and application.

Electricity tariffs subject to state regulation include purchases from producers, wholesale and retail sales, and import/export transactions. The Law on Electricity stipulates that tariffs cover the full cost of generation, transportation and distribution, and ensure the profitability of power enterprises. The electricity sector is almost entirely state controlled, and separate prices for wholesale electricity, transmission and distribution have been assigned.

Electricity tariffs in Azerbaijan, 2022

No.	Service	Tariff (VAT included, qapik per kWh)
1	**From producer**	
1.1	Private small hydropower stations	5.0
1.2	Wind	5.5
1.3	Other renewable resources	5.7
1.4	Alternative sources	6.6

No.	Service	Tariff (VAT included, qapik per kWh)
2	**Wholesale tariffs**	6.6
2.1	Aluminium industry, with average monthly electricity consumption above 5 million kilowatt hours:	
2.1.1	Daytime (08:00-22:00)	6.4
2.1.2	Night time (22:00-08:00)	3.1
3	**Transit**	**0.2**
4	**Retail tariffs**	
4.1	**Residential**	
4.1.1	Monthly consumption of up to 200 kilowatt hours	8.0
4.1.2	Monthly consumption of 200 to 300 kilowatt hours	9.0
4.1.3	Monthly consumption exceeding 300 kilowatt hours	13
4.2	**Non-residential**	
4.2.1	Trade and services	11.0
4.2.2	Others	10.0

Notes: USD 1 = 1.70 Azerbaijan manats (AZN). VAT = value-added tax. kWh = kilowatt-hour. 1 qapik = AZN 0.01.
Source: Tariff (Price) Council of Azerbaijan (2022).

There are no feed-in tariff incentives or special tariffs for foreign investors, although a feed-in tariff is included in the draft Law on Renewables.

Government bodies may modify decisions made by the Tariff (Price) Council when this right is granted by legislation, and regulatory decisions may also be overturned by court ruling. Energy companies may appeal decisions of the Tariff (Price) Council, either directly to the council or through court action.

Natural gas tariffs in Azerbaijan, 2022

No.	Service	Tariff (VAT included, AZN/1 000 m^3)
1	**Natural gas processing**	**5.5**
2	**Natural gas transportation**	**5.3**
3	**Underground gas reservoir injection and extraction**	

3.1	Injection of natural gas into underground gas reservoirs	8.25
3.2	Extraction of natural gas from underground gas reservoirs	8.25
4	**Natural gas purchased from producers**	**90.0**
5	**Wholesale natural gas purchased by gas distributors**	**118.0**
6	**Retail sale of natural gas**	
6.1	**Residential**	
6.1.1	For the part of annual consumption not exceeding 1 200 m^3	120.0
6.1.2	For the part of annual consumption between 1 200 m^3 and 2 500 m^3	200.0
6.1.3	For the part of annual consumption exceeding 2 500 m^3	250.0
6.2	**Non-general population**	
6.2.1	To supply multi-apartment residential buildings with central heating and hot water; legal entities and individuals regardless of their organisational and legal status; Azeristiliktehizat Open Joint-Stock Company; and gas filling stations selling compressed natural gas (CNG)	165.0
6.2.2	For use as a raw material to produce methanol and urea products	200.0
6.2.3	Industry and agriculture	220.0
6.2.4	Other areas	250.0
7	**To produce electricity, sold within the country by direct connection to main gas pipelines (provided monthly consumption is above 10 million m^3)**	**165.0**

Notes: USD 1 = AZN 1.70. m^3 = cubic metre.
Source: Tariff (Price) Council of Azerbaijan (2022).

Metering and collection

All electricity and natural gas consumption is metered in Azerbaijan. Metering systems comply fully with international standards, and distribution entities own all end-user meters. Electricity and natural gas tariffs for households and most commercial entities are differentiated.

Azerenergy's programme for widespread installation of prepaid meters was taken over by Azerishiq in 2015 and is ongoing, with all consumers expected to be equipped with smart meters soon. Around 20% of the company's 1.5 million customers have prepaid smart meters that improve tracking of consumption and prevent illegal connections, and collection rates have improved significantly: more than 93% for electricity and 100% for gas in 2020.

Cross-border flows are operated and metered by Azerenergy for electricity and by SOCAR for oil and gas. Metering on both sides is done electronically: both parties

submit readings, reconcile the data, and prepare and verify metering reports. Bilateral agreements govern the transactions, and a working committee carries out investigations and resolves conflicts in data discrepancies.

Technical rules

The governmental standards (GOST) of the former Soviet Union are still in use in both Azerbaijan's electricity and gas sectors. However, Azerbaijan is also represented in international and regional standardisation organisations:

- the International Organization for Standardization (ISO) (member)
- the European Committee for Standardization (affiliate)
- the Interstate Council for Standardization, Metrology and Certification of the Commonwealth of Independent States of the Euro-Asian Council for Standardization, Metrology and Certification.

The country's reform agenda includes a national plan to convert mandatory standards to technical regulations and voluntary standards, a draft law on technical regulations, and draft laws on standardisation and accreditation.

Furthermore, Azerbaijan's accession to the World Trade Organization (WTO) involves significant trade policy reforms. One of the key areas is standards and technical regulations: Azerbaijan particularly needs to ensure its compliance with the WTO Technical Barriers to Trade Agreement and is therefore in the process of reforms to guarantee harmonisation.

Key policies

The 2004 State Programme on the Development of the Fuel-Energy Complex for 2005 to 2015, designed to support oil and gas developments and to ensure energy supply security, set out Azerbaijan's main energy policy. As part of the programme, the government invested in capacity building, rehabilitation and natural gas extraction to reduce electricity shortages and improve energy supply security.

As a result, since 2005 electricity production capacity has increased, electricity and gas losses have been reduced, and the country became a net exporter of gas with the opening of the Shah Deniz field.

Although the programme's term ended in 2015, there are plans for further field exploitations and capacity building. At the end of 2016, the government announced its Strategic Roadmap for the Development of Public Utility Services (electricity and thermal energy, water and gas supply) covering Azerbaijan's 2016 to 2020 development strategy, long-term outlook to 2025 and target vision after 2025. The roadmap was approved by the president in 2016 and updated through

17 July 2018. It sets several strategic targets, including for sustainability and efficiency.

Azerbaijan has significant untapped wind, solar, small hydro, biomass and geothermal potential. In 2004 the government adopted the State Strategy on the Use of Alternative and Renewable Energy Sources in Azerbaijan for 2012 to 2020. In May 2021, it also adopted the Law on Using Renewable Energy Sources in Electricity Production, providing a legal basis to develop renewable energy projects in the country. The law envisages the introduction of auctions and tenders as support mechanisms and also includes other draft legislative documents such as a power purchase agreement (PPA) and a connection agreement. In addition, rules on auctions and on net-metering and net-billing schemes are being drafted.

In June 2021, the Law on the Efficient Use of Energy Resources and Energy Efficiency entered into force, establishing rules for energy audits, energy management and energy services, as well as for production, transmission, distribution and storage efficiency, awareness raising and other activities. However, the government still needs to develop specific policies and incentive schemes to improve energy efficiency and must also elaborate a National Energy Efficiency Action Plan (NEEAP).

In August 2022, Azerbaijan's Cabinet of Ministers approved a Decision on Requirements for the Energy Management System, which determines how economic entities may apply energy management systems. To implement energy efficiency measures, an economic entity may create, implement, maintain and constantly improve its own energy management system.

Azerbaijan's State Commission on Climate Change was established in 1997, and the country has been in negotiations to accede to the WTO since then. It ratified the Kyoto Protocol in 2000, became a member of the International Renewable Energy Agency (IRENA) in 2009, and is a non-Annex I Party to the United Nations Framework Convention on Climate Change (UNFCCC). In 2016 to 2017 Azerbaijan signed and ratified the Paris Agreement.

Energy statistics

The State Statistical Committee (SSC) is responsible for official energy statistics and balances in Azerbaijan. Energy data are collected monthly to annually through surveys on production, transformation and consumption, with respondents having the option of responding through online forms. Data are broadly aligned with International Recommendations for Energy Statistics.

Monthly data are available on large enterprise production, fuel stocks, aviation and marine bunkers, and energy distribution, whereas households are surveyed on an annual basis. Administrative data complement survey data, and the SSC has

access to monthly trade data from the State Customs Committee as well as business registers and other enterprise surveys.

Every year, the SSC publishes *Energy of Azerbaijan* dedicated to energy statistics, available free of charge in PDF format. Data are also available on the statistics website in electronic format with the option of creating charts, excel files and PDFs from the selection. Metadata are available in Azerbaijani.

Azerbaijan disseminates annual energy data internationally by sharing data with the United Nations Statistics Division (UNSD) and the IEA through annual joint United Nations Economic Commission for Europe (UNECE)/IEA/Eurostat questionnaires. It also participates in the Joint Organisations Data Initiative (JODI) for oil and gas through the UNSD, contributing to global monthly oil and gas data transparency.

The SSC has established solid links with data providers and users, among them the former SAARES, now the AREA under the Ministry of Energy.

Azerbaijan was the first country of the Former Soviet Union to publish an energy balance according to International Recommendations for Energy Statistics, and has done major work on methodological issues, including a full review of calorific values with the National Academy of Sciences (2011). It has hosted meetings of both the Oslo Group (2013) and JODI (2014), and in 2017 it conducted an end-use household energy consumption survey. It also plans to develop a data set of energy efficiency indicators.

Energy security

Resource endowment

Azerbaijan is rich in oil and natural gas resources. According to the June 2021 BP *Statistical Review of World Energy*, at the end of 2020 its oil reserves of 7 billion barrels (1 Mt) accounted for 0.4% of global reserves. Oil is produced both onshore and offshore in the Caspian Sea, with offshore production accounting for about one-quarter of the total.

The Azeri-Chirag-Deepwater Gunashli (ACG) field, located about 100 km east of Baku, is the largest oilfield in the Azerbaijan sector of the Caspian Basin. Discovered in the early 1970s when Azerbaijan was part of the Soviet Union, it comprises a series of individual reservoir horizons located 2 000 to 3 500 metres beneath the Caspian seabed. The Government of Azerbaijan and a consortium of 11 foreign oil companies signed a PSA in Baku in September 1994.

Azerbaijan has an estimated 2.5 trillion cubic metres of proven natural gas reserves, according to the BP *Statistical Review of World Energy 2021*. While Azerbaijan is not as prominent in global gas as it is in oil, gas extraction is expected to continue contributing significantly to the economy in upcoming decades.

Energy security and diversification

The country's energy mix is heavily concentrated in fossil fuels, with oil and gas accounting for more than 98% of total supply. While supply security is not a concern, heavy reliance on fossil fuels elevates GHG emissions and exposes the country to fuel price fluctuation risks. In addition, although ageing natural gas networks have been significantly modernised with new compressor stations and ancillary infrastructure, distribution system losses and gas supply quality remain concerns.

Electricity generation is dominated by natural gas (90%), while large hydropower plants generate 4%. Electricity supply security improved over the 2007 to 2017 decade with modernisation of the generation system and strengthening of the west-east transmission network; additional gas-fired generation capacity has reduced the frequency of electricity shortages, and hydropower projects have also made shortages less common. As resource-related income has boosted growth of the middle class, demand for electricity has increased, making further capacity additions necessary.

Azerbaijan's renewable energy potential promises multiple advantages for the country. Relying more on renewable energy would help Azerbaijan save natural gas for exports and for use in the petrochemical industry; reduce the country's GHG emissions to meet its 2030 Paris Agreement commitment; and improve electricity security by diversifying generation. As part of its planned energy market reforms, the government has drafted a renewable electricity law and aims for renewable energy to provide 30% of electricity generating capacity by 2030 – almost twice the 2018 share of 16%.

Furthermore, the country adopted a Law on Using Renewable Energy Sources in Electricity Production in May 2021, providing a legal basis to develop renewable energy projects. The law envisages the introduction of auctions and tenders as support mechanisms, and it includes other draft legislative documents such as a PPA and a connection agreement.

Emergency response

Established in 2005, the Ministry of Emergency Situations is responsible for emergency response mechanisms in all sectors of the economy. Its mandate includes natural and human-caused disasters and fire, as well as emergency situations involving power system incidents, utility systems, hydropower facilities, oil and gas production and processing facilities and main pipelines. It provides policy measures in the fields of civil defence, rescue and restoration work.

As a net exporter of oil and gas with domestic refining and storage capacity, Azerbaijan has not developed emergency storage or stock monitoring systems. However, the country has mitigated the risk of supply or demand shocks by diversifying its export routes and its oil product import sources.

Fuel switching

Over the last 20 years, Azerbaijan has invested heavily in modernising its energy infrastructure, including for electricity generation. A 2002 presidential decree was adopted for the energy sector, setting the goal of eventually switching all thermal power plants to natural gas, and in the following years old generation plants were all modernised and switched. More than 90% of electricity is now generated from natural gas, but the system is designed to switch back to heavy oil in emergencies.

Oil and gas

Resources

Azerbaijan is rich in oil and natural gas resources. According to the June 2018 BP *Statistical Review of World Energy*, the country's remaining commercial liquid reserves (crude and condensate) are typically indicated to be 7.0 billion barrels (bbl), accounting for 0.4% of global reserves. Oil is produced both onshore and offshore in the Caspian Sea, with offshore production making up about one-quarter of the total.

The ACG field, situated about 100 km east of Baku, is the largest oilfield in the Azerbaijan sector of the Caspian Basin. Discovered in the early 1970s when Azerbaijan was part of the Soviet Union, it comprises a series of individual reservoir horizons 2 000 to 3 500 metres beneath the Caspian seabed. The Government of Azerbaijan and a consortium of 11 foreign oil companies signed a PSA for its exploitation at Baku in September 1994.

Azerbaijan has an estimated 1.3 trillion cubic metres of proven natural gas reserves, and according to the operator (BP), the Shah Deniz gas field is one of the world's largest at more than 1 000 bcm. While Azerbaijan is not as large a figure in global gas as it is in oil, gas extraction is expected to continue contributing significantly to the economy in the coming decades.

Oil: National market structure

SOCAR was created in September 1992 with the merger of Azerbaijan's two state oil companies, Azerineft State Concern and Azerneftkimiya Production Association. It is involved in exploring oil and gas fields; producing, processing and transporting oil, gas and gas condensate; marketing petroleum and petrochemical products in domestic and international markets; and supplying natural gas to industry and the public in Azerbaijan. Three production divisions, one oil refinery and one gas processing plant, a deepwater platform fabrication yard, two trusts, one institution, and 23 subdivisions operate as corporate entities under SOCAR.

Third-party access to pipelines is not permitted under existing legislation, and changes to the current market structure are not envisaged.

Cross-border interconnections

Oil pipelines connect Azerbaijan with its neighbours, as well as with European and world markets. Three major pipelines run through the country, owned by either BP or SOCAR.

About 80% of the country's oil is exported through the Baku-Tbilisi-Ceyhan (BTC) pipeline, which began operations in 2006 and has a capacity of 1.2 million barrels per day. It transports crude oil produced at the ACG field as well as condensate produced at Shah Deniz from the Sangachal terminal near Baku through Georgia to the Mediterranean port of Ceyhan in Türkiye, and from there the oil is shipped by tanker to world markets. The BTC pipeline is 1 768 km long, with 443 km in Azerbaijan, 249 km in Georgia and 1 076 km in Türkiye. As it has ample free capacity, it also transports some Turkmen and Kazak oil.

The Baku-Novorossiysk pipeline runs from the Sangachal terminal on the Caspian Sea to the Novorossiysk terminal on the Black Sea in Russia. It is 1 330 km long with a capacity of 105 000 barrels per day (b/d) and has been operating since 1996; SOCAR operates the Azerbaijani section and Transneft operates the Russian section. Despite proposals to increase the pipeline's capacity, which would be a key transportation addition as production expands in the Caspian Sea, operation of the pipeline was halted in 2014 and resumed in 2015 at lower loading levels.

The SOCAR-owned, BP-operated Baku-Supsa pipeline, whose route parallels that of the BTC via Azerbaijan and Georgia, transports crude oil from offshore oilfields in the Caspian Sea to Supsa, Georgia, on the Black Sea where it continues to European markets via tankers. It is 833 km long with a capacity of 145 000 b/d and has been in operation since 1999.

Natural gas: National market structure

SOCAR's Azerigaz Production Union was established with the facilities and equipment of the Azerigaz Closed Joint-Stock Company, in accordance with Decree No. 366 Concerning Improvements in Petroleum Industry Management Systems of July 2009. Six production divisions and organisations are consolidated within Azerigaz.

The company transmits, distributes and markets natural gas in Azerbaijan, and it also transports SOCAR gas to Georgia, Iran and Russia. Total gas transported annually by the company within and outside the country is 12.6 bcm. By supplying natural gas to all the country's fossil fuel power plants, Azerigaz plays a significant role in developing the country's electrical power industry.

The company can reach up to 1.3 million consumers in different parts of Azerbaijan. Its system for managing the gas supply network consists of eight trunk gas pipeline sections, seven compressor stations, 67 gas service areas, 79 automatic gas distribution stations, 77 gas distribution stations, 35 gas distribution points, a total 44 372 km of pipelines, and many other units.

Residential natural gas prices are set at AZN 120/1 000 m^3 (~USD 70/1 000 m^3) for consumers whose annual consumption is less than 1 200 m^3, and at AZN 200/1 000 m^3 (~USD 117/1 000 m^3) for those who consume 1 200 to 2 500 m^3. Consumption over 2 500 m^3 is billed at AZN 250 (USD 147). The price for electricity producers (if monthly consumption is over 10 million m^3) is fixed at AZN 160/1 000 m^3 and for industrial consumers at AZN 200/1 000 m^3.

Natural gas infrastructure

Azerbaijan became a net exporter of natural gas in 2007 with the start-up of the huge Shah Deniz natural gas and condensate field. Before then it imported gas from Russia.

The country has two main gas export pipelines. The largest is the South Caucasus Pipeline (SCP) that transports gas from the Shah Deniz field through Georgia to Türkiye parallel to the BTC crude oil pipeline. The SCP is 693 km long (443 km in Azerbaijan and 250 km in Georgia) and has a capacity of 7 bcm.

The second export pipeline is the Hajigabul-Mozdok, which transported natural gas from Russia to Azerbaijan until 2007 when an agreement between SOCAR and Gazprom allowed the pipeline's flow to be reversed, and gas exports to Russia began in 2010. The pipeline's annual capacity is 10 bcm, and 200 km of its total 680 km are in Azerbaijan. SOCAR and Gazprom (Russia) operate this pipeline.

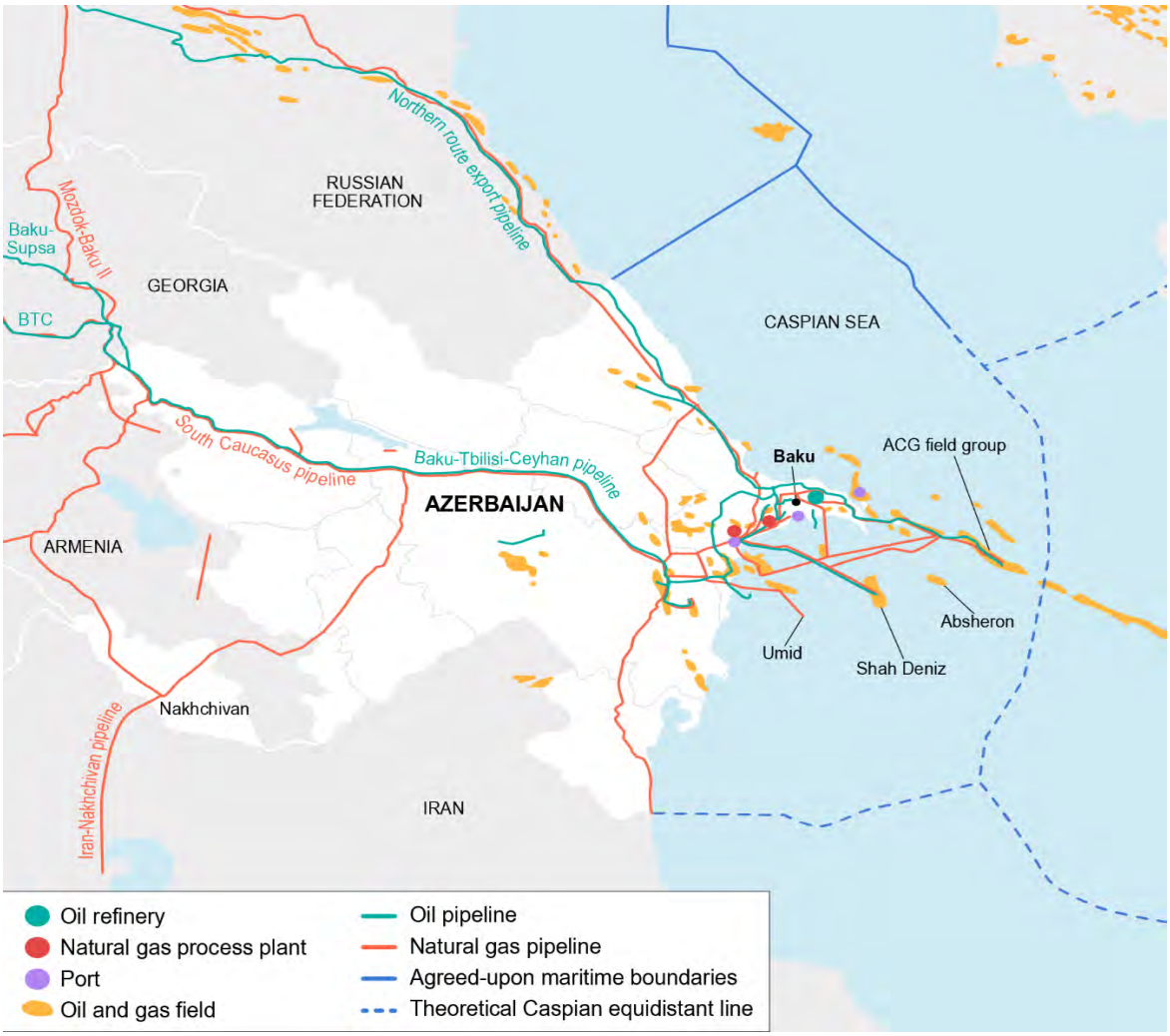
While Shah Deniz I produces around 9 bcm/year, Shah Deniz II began producing in mid-2018 and its volume is expected to eventually plateau at 16 bcm per year.

Shah Deniz II and the SCP pipeline are key parts of the Southern Gas Corridor infrastructure project to deliver Caspian gas to the European Union. The other parts are the Trans-Anatolian Pipeline (TANAP) crossing Türkiye to Greece, and the Trans-Adriatic Pipeline (TAP) that leads from Greece via Albania to Italy. TANAP was officially brought online in Türkiye in June 2018 and TAP was commissioned in late 2020.

TANAP has the potential to expand from 24 to 31 bcm/year, while TAP's initial capacity is 10 bcm per year. The Southern Gas Corridor is a joint project of several major international companies, including SOCAR.

Azerbaijan also has two underground gas storage facilities: Kalmaz and Garadag, both located at Garadag. Gas is supplied by the Gazi-Mammad-Baku pipeline, and total storage capacity is around 3.5 bcm (Kalmaz 1.5 bcm; Garadag 2 bcm). There are plans to expand the capacity of underground gas storage facilities to 5 bcm.

Oil and gas interconnections in Azerbaijan, 2022



Source: State Oil Company of the Republic of Azerbaijan (2022).

Electricity generation

Along with the oil and gas sector, the electricity sector plays a leading role in Azerbaijan's social and economic development. Large investments in power generation and transmission since 2009 have resulted in remarkable improvements in the quality of power supply. Electricity generation is now sufficient to cover domestic demand, and the power system is capable of supplying electricity of acceptable quality to almost the entire population.

Azerbaijan's gross electricity generation reached 26.1 terawatt hours (TWh) in 2019, up 20% from 2008. Natural gas is the main generation resource, at 92% in 2019 (ten-year average 88%), while hydropower accounted for 6% (ten year average 9%) and other renewable sources (solar, wind and waste) for 1% of total

generation. Co-generation plants produced 7.5 TWh of electricity, or 31% of the total in 2019.

In 2021, electricity generation reached 27.8 TWh, up 7.9% from 2020. Of this, approximately 95% came from thermal power plants and 5% from other sources, mainly hydropower plants.

Azerbaijan has a total installed capacity of over 7.5 gigawatts (GW): 6.5 GW of oil- and gas-fired generation and 1.1 GW of hydro. In addition, the country has a small amount of wind, solar and other renewable energy generation.

Transmission and distribution

Azerbaijan's high-voltage network totals around 7 800 km: 1 505 km at 220 kV; 31 km at 230 kV; 1 542 km at 330 kV; and 477 km at 500 kV. The network has 93 high-voltage substations.

Although the distribution system's voltage is generally below 110 kV, in some cases both the transmission system operator (TSO) and the distribution system operator (DSO) operate at the 110 kV level. The total installed capacity of the substations operated by the DSO Azerishiq exceeds 10 000 megavolt amperes (MVA).

Efforts to reduce network losses are delivering results. From 2015 to 2019, the percentage of transmission losses in total electricity supply fell from 2.1% to 1.5%, and distribution losses from 9.6% to 7.5%. Azerishiq is carrying out a programme to rehabilitate distribution network substations and lines, replace low-quality customer service lines and install smart meters across the country. The programme, designed to run from 2016 to 2022, is backed by a USD 750 million loan from the Asian Development Bank (ADB). As a result of the programme, the efficiency and reliability of the power distribution networks, including distribution lines and substations, improved. Substations were rehabilitated, augmented, and became functional. Customer service lines were rehabilitated and smart meters were installed. Institutional capacity improved and corporate reforms were achieved. The average level of non-supplied electricity fell from 7% in 2014 to less than 1% in 2021. The company also constructed multiple 110/35 kV substations and connected them to the grid.

Cross-border interconnections

Azerbaijan has been exporting electricity since 2007. In 2021, it exported around 1.6 TWh to Georgia, Russia and Türkiye. Transmission capacity with Russia is around 350 MW.

With Georgia, Azerbaijan has two cross-border connections: the 500 kV Samukh-Gardabani line (650 MW of export capacity to Georgia and to Türkiye via transit) and the 330 kV Agstafa-Gardabani line.

With Iran, Azerbaijan has five cross-border connections: the 330 kV Mugan, 230 kV Imishli and 110 kV Astara-Astara lines, owned by Azerenergy Open Joint-Stock Company (OJSC); and the 132 kV Araz-Araz and 132 kV Julfa-Julfa lines, owned by Nakhichevan State Energy Service. Current cross-border capacity is 600 MW. In co-operation with Iran, two hydropower plants are being constructed: the 200 MW Khudaferin (100 MW for each side) and the 80 MW Maiden Tower (40 MW for each side).

Azerbaijan also has three cross-border connections with Türkiye: the 154 kV Igdir-Nakhchivan 1, the 154 kV Igdir-Nakhchivan 2 and the 34.5 kV Sadarak lines.

Market structure

The domination of Azerbaijan's electricity market by state-owned vertically integrated monopolies has eliminated all competition. The government owns and manages the energy sector, and it is committed to sectoral reform with the aim of improving system efficiency, supply reliability and transparency. As a first step to reform, all power distribution assets and functions were entirely separated from the state-owned company Azerenergy (Azerenerji OJSC) and transferred to another state-owned company, Azerishiq OJSC (formerly Bakielektrikshebeke OJSC, i.e. Baku Electric Company), in 2015.

As the largest electricity provider, Azerenergy owns and operates most generation assets including gas-fired, oil-fired and hydro plants, and is the TSO.

Azerishiq OJSC is the one hundred percent state-owned enterprise responsible for electricity distribution, supply and other customer services (connection, metering and billing), except in the Nakhchivan Autonomous Republic, which is directly administered by its own state energy agency. Azerishiq oversees the seven regional distribution networks of Aran, Baku, Canub, Garb, Markazi Aran, Shimal and Shimal Garb.

In the Nakhchivan Autonomous Republic, the Nakhchivan Energy Authority is the state-owned TSO and the DSO, and it carries out dispatch operations. Existing legislation envisages unbundling of the electricity sector, but no implementation measures have been taken.

The Law on the Power Industry (1998) sets out some provisions for third-party access so that Azerenergy can purchase electricity from other producers, and other entities can buy electricity from Azerenergy (or other state companies) and sell it to end consumers. Alternatively, independent generators or industries can

supply electricity to consumers on their own grids or through the state transmission system; these arrangements account for around 1% of electricity generation.

The government is considering reforming the electricity market. The 2016 Strategic Roadmap for the Development of Utilities (electricity, heat, water and gas) calls for a gradual transition to a liberal market model based on enhanced competition, unbundling, establishment of a wholesale market and a larger share of renewables.

Taking international experience into consideration, the government has prepared a draft Law on Electricity that envisages gradual market reform by 2025. It plans to allow independent generators to enter the sector and acquire existing power plants or build new ones. Privatisation of strategic assets is not expected to adversely affect energy sustainability and security.

Electricity tariffs are set at AZN 0.08/kWh (~USD 0.04/kWh) for consumers whose monthly consumption is under 200 kWh; AZN 0.09/kWh for 200 to 300 kWh; and AZN 0.13 for consumers using more than 300 kWh per month.

District heating

Azerbaijan uses natural gas for around 99% of its space heating. In the decades since the collapse of the Soviet Union, the government has focused on expanding the natural gas grid to the whole population, and district heating has become less important.

Detailed data on the market shares of individual heating technologies in Azerbaijan are not available, but individual gas boilers cover at least 80% of heating needs, owing to generous subsidies for small-scale gas use. However, district heating continues to be important in some sectors: in 2017, it provided heating services to 26% of hospitals; 9% of preschools; 6% of schools; and 2.6% of residential buildings.

Moreover, there is scope for it to figure more significantly in Azerbaijan's future energy system. Combined with electricity and cooling generation, and heat pump and waste heat use, modern district heating technologies have the potential to provide economically and environmentally attractive clean energy.

Energy system transformation

Azerbaijan has yet to tap into its significant renewable energy and energy efficiency potential, but in 2021 the Parliament approved several laws to this end. Higher ambitions and greater efforts to produce renewable energy and improve energy efficiency will also help the country conserve natural gas and oil for exports while meeting GHG commitments.

Azerbaijan joined the UNFCCC as a non-Annex I country in 1995 and ratified the Paris Agreement in 2016. The government has outlined climate change mitigation actions in a number of sectors, including energy, and the Ministry of Ecology and Natural Resources is preparing both a national strategy for climate change and a national low-carbon strategy.

Because securing energy independence in the long term is central to Azerbaijan's energy policy, it has recognised the value of diversifying its economy, increasing energy efficiency and supporting GHG emission mitigation programmes. It therefore supports the development of renewable energy sources with the objectives of:

- Recognising the potential of alternative and renewable energy sources in electricity generation.
- Exploring alternative and renewable energy sources for the sake of energy efficiency.
- Providing jobs in research and innovation to develop new energy generation technologies.
- Diversifying and improving the energy capacity of the country to ensure energy security.

Renewable energy

Azerbaijan has significant untapped renewable energy potential, as it is a relatively sunny and windy country, and it also has sizeable hydro, biomass and geothermal resources. Although its energy policy focused until recently on developing the country's significant oil and gas resources, it has been transitioning in the past few years: in early 2020, major contracts to build wind and solar power capacity were signed, and in May 2021 the Parliament approved a Law on the Use of Renewable Energy Resources in Electricity Production.

This new law will allow Azerbaijan to exploit its renewable energy potential by establishing a legal basis for project development and by introducing competitive

bidding processes and support mechanisms for active consumers (i.e. prosumers). It also covers the development of other legislative documents, including a draft PPA and a connection agreement. In addition, rules on auctions and on applying net-metering and net-billing schemes have been drafted, and draft laws on electricity and gas supplies are currently under review.

Solar

As Azerbaijan is relatively sunny, it has excellent solar power potential. According to the Ministry of Energy, technical potential is around 23 000 MW. The country's 2 400 to 3 200 sunshine hours annually compare well internationally, as does its solar intensity, estimated at 1 500 to 2 000 kWh/m^2. The best resources are in the central river valleys and the north and northwest.

Wind

Azerbaijan is relatively windy, especially along the Caspian Sea coast. According to the Ministry of Energy, the country has roughly 3 000 MW of technical and 800 MW of economic wind power potential. This economic potential could generate around 2.4 TWh and conserve approximately 1 Mt of conventional fuel, avoiding the corresponding CO_2 emissions.

The Azerbaijan Scientific-Research and Design Institute of Power Engineering, in co-operation with the Japanese company Tomen, determined that Absheron's average annual windspeed is 7.9 to 8.1 metres per second (m/sec). The country's overall average windspeed of 6 m/sec further confirms its economic and technical potential for wind power.

Small hydro

Although hydropower is Azerbaijan's largest source of renewable energy today, its potential has not been fully exploited. According to the Ministry of Energy, the country's technical potential for small hydro is 520 MW, which could generate up to 3.2 TWh annually.

Geothermal

Azerbaijan's Renewable Energy Agency under the Ministry of Energy (formerly SAARES) states that the country has up to 800 MW of geothermal energy potential. Initial studies indicate that the 11 geothermal zones available in Azerbaijan hold water of 30 to 100°C that can generate either electrical or heat energy, depending on the type of thermal water. According to the Azerbaijan National Academy of Sciences, water in the Guba region is 36 to 85°C, and up to 95°C in the Kura-Aras lowland.

Biomass

Rapid growth in industry, agriculture and social services in Azerbaijan is creating new opportunities for electricity generation from biomass derived from combustible industrial waste, forestry and food processing waste, agricultural waste, and other biological substances. The Ministry of Energy estimates technical potential of 380 MW.

Waste

More than 2 Mt of solid domestic and production wastes are disposed of annually at Azerbaijan's waste treatment sites. Processing solid domestic and production wastes could help resolve challenges in heating public buildings in Baku and other large industrial cities.

Energy efficiency

Following adoption by Azerbaijan's parliament in June 2021, the Law on Efficient Use of Energy Resources and Energy Efficiency entered into force. This law establishes rules for energy audits; energy management; energy services; production, transmission, distribution and storage efficiency; awareness raising; and other activities. It also provides for development of the country's first NEEAP.

The argument for rapid action on energy efficiency is strong, building on newly adopted legislation and bearing in mind Azerbaijan's Paris Agreement pledge to reduce GHG emissions 35% from 1990 to 2030. IEA member country experience shows that minimum energy performance standards are among the most effective and economical energy efficiency policy instruments.

The government should therefore introduce stringent standards across all sectors: buildings, vehicles, appliances and equipment, and should implement an effective mechanism for energy efficiency audits. To these ends, Azerbaijan needs to attract more private sector investments to modernise equipment, adopt energy-efficient technologies and set up a market-oriented management system.

Pricing energy at an appropriate level is critical to attract investment and to encourage citizens to use energy efficiently. However, current oil, gas and electricity prices for end users in Azerbaijan are among the lowest in the region, falling below the full cost of supply. Furthermore, Azerbaijan's energy price subsidies in 2018 were three times higher than in 2010 according to IEA estimates, amounting to USD 2.6 billion, or 5.8% of GDP. Under such strongly subsidised tariffs, residential and industrial consumers have no incentive to use energy more efficiently. Saved energy could be exported to increase the country's revenues, or it could simply be used more efficiently elsewhere for the benefit of the national economy.

Environmental protection

The main objectives of Azerbaijan's environmental policy are to protect existing ecological systems while realising the country's economic potential, and to efficiently use natural resources to meet the energy needs of present and future generations. Ensuring sustainable development from an environmental viewpoint means avoiding or minimising any serious environmental impacts resulting from economic activities.

Azerbaijan's environmental policy's three main objectives are to:

- Take environmental security as a basic requirement, applying best available practices to sustainable development principles to minimise human impacts on the environment and to regulate its protection.
- Use natural resources efficiently by employing alternative, nonconventional methods to generate energy from renewable energy sources and achieve energy efficiency to meet the needs of present and future generations.
- Assess national requirements in consideration of global environmental issues, finding solutions and ensuring their implementation by expanding relations with international organisations.

Environmental protection in Azerbaijan is governed by the Law on Environment Protection (1999), which establishes the main environmental protection principles and the rights and obligations of the state, public associations and citizens. It establishes requirements for environmental impact assessments; for environmental quality standards and permits concerning activities that affect the environment; for prevention and reduction of environmental pollution; and for environmental monitoring and control. It also addresses the role of the public and sanctions imposed on violators.

Transport is by far the largest source of air pollution in Azerbaijan, accounting for 85% of the total volume of air pollutants. Raising fuel quality is crucial to limit air pollution from transport, the sector responsible for more than three-fifths of the country's total oil consumption in 2018. Azerbaijan follows European Union vehicle emission standards, and since April 2014 it has been applying the Euro 4 standard that imposes limits for several pollutants, including NOx and particulate matter. Plus, ongoing modernisation of the Heydar Aliyev Oil Refinery, which supplies almost all the country's transport fuel, will enable it to produce high-quality diesel and gasoline that meets the Euro 5 standard.

In contrast to transport, air pollution from stationary sources has decreased over the past 15 years, thanks to a switch from oil-fired to gas-fired power generation and to modern technologies in oil and gas production. Emissions can be reduced further by increasing efficiency, saving energy and using alternative energy sources.

Climate change

Azerbaijan approved the UNFCCC in 1995 and the Kyoto Protocol in 2000. In 2016, it signed the Paris Agreement and ratified it in 2017. Its NDC is to reduce GHG emissions 35% from 1990 to 2030. The latest official GHG emissions figures are from 2017, when emissions were 38% below 1990 levels and the energy sector accounted for 75% of total emissions. According to the most recent IEA data, in 2017 Azerbaijan's CO_2 emissions from fuel combustion amounted to 30.9 Mt (+6.6% since 2005; -42.1% since 1990). Attaining the 2030 NDC target will be complicated, however, if the country does not tackle climbing transport fuel demand (which is unrestrained by prices or taxes) and the rise in natural gas consumption (which is subsidised in all sectors).

Although the country does not currently have legally binding climate targets or measures, it has outlined climate change mitigation actions for its energy, oil and gas, residential and commercial, transport, agriculture, and waste sectors. These actions primarily entail technological improvements to reduce the negative environmental impacts of various sectors of the economy, together with some regulatory changes and public awareness measures.

The Ministry of Ecology and Natural Resources is also preparing a National Strategy for Low-Carbon Development and a Climate Change Adaptation Plan. Working groups have been established, made up of representatives of all the relevant ministries and state agencies.

Energy research, development and deployment

The National Academy of Sciences of Azerbaijan co-ordinates academic research, while the Ministry of Energy, the Ministry of Digital Development and Transport, the Azerbaijan State Oil and Industrial University and SOCAR carry out research and development (R&D) activities through their own or subordinated institutes. Private businesses and international financial institutions/donors also contribute to R&D.

Nevertheless, Azerbaijan's research, development and deployment (RD&D) system and governance remain incohesive. Although the president issued an Order on Ensuring Co-ordination in the Field of Innovative Development in the Republic of Azerbaijan in January 2019, the policy and funding appear fragmentary and only partially co-ordinated and would benefit from streamlining.

Total spending on all R&D remains at 0.2% of GDP, around half the level of the lowest-spending OECD member country. RD&D is funded from the state budget,

the State Science Fund and SOCAR, as well as by the private sector. Only a small portion of state funding is allocated to energy-related RD&D.

Although Azerbaijan's economy as well as its energy research and technology base are dominated by the oil and gas industry, diversifying to energy efficiency and renewable energy solutions in RD&D would merit the effort. RD&D and innovation in the field of energy efficiency and renewable energy would benefit from framework legislation to create inviting conditions and provide incentives for small and medium-sized enterprises.

Several research and educational institutions carry out energy technology R&D in the country. They have participated in national and international programmes and projects to enable Azerbaijani scientists and researchers to contribute to the body of knowledge while acquiring new skills and information themselves.

Meanwhile, a presidential decree of 8 November 2016 created the ANAS High Technologies Park (HTP). The HTP aims to establish application mechanisms for industry-driven projects, provide technological innovation for mass production, and facilitate practical work in the field of science and technology. Petrochemicals is one of the HTP's focus areas.

Baku Engineering University also started a technology park in 2013 to support student innovation. The park organises competitions and provides funding to help students develop innovative ideas, and BP sponsors high-spec labs to support this work. The university is launching a programme to prepare specialists in long-term energy planning.

SOCAR, the country's largest company, conducts research, development and innovation activities in its Oil and Gas Research and Design Institute. Together with the National Academy of Science, it provides AZN 5 million per year for research, and it also offers stipends for scientists. The Institute's work covers a wide range of petroleum industry activities: geological and geophysical surveys of prospects and oil and gas fields; exploration, and the preparation of prospects for development; oil and gas field development; well drilling, completion and operation; petrochemical and petroleum processing engineering; petroleum industry economic and management studies; short-term reservoir engineering strategies; environmental protection; and petroleum product processing, storage and transportation.

In January 2019 the president issued an Order on Ensuring Co-ordination in the Field of Innovative Development in Azerbaijan with the aim of strengthening the links between public sector R&D institutions and the private sector.

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