

2025 - 2034 TEN-YEAR NETWORK DEVELOPMENT PLAN OF BULGARTRANGAZ EAD

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DEFINITIONS AND ABBREVIATIONS

The following definitions and abbreviations are used for the purposes of this document:

AGRS – Automatic Gas Regulation Station

BEH – Bulgarian Energy Holding EAD

BGH - Balkan Gas Hub EAD

CEF – Connecting Europe Facility

CESEC - Central and South Eastern Europe Energy Connectivity - initiative for energy connectivity in Central, Eastern and Southeast Europe;

CIW – Construction and Installation Works

Company – Bulgartransgaz EAD is an independent combined gas operator in Bulgaria

CS – Compressor Station

ECHA – European Clean Hydrogen Alliance

EEC – End Energy Consumption

EHB – European Hydrogen Backbone

EIA – Environmental Impact Assessment

ENNOH – European Network of Network Operators for Hydrogen

ENTSOG – European Network of Transmission System Operators for Gas

EU - European Union

EWRC – Energy and Water Regulatory Commission (formerly SEWRC)

Gas infrastructure of Bulgartransgaz EAD - gas transmission network infrastructure and underground gas storage in Chiren (Chiren UGS), connected to it

GDP – Gross Domestic Product

GIE – Gas Infrastructure Europe

GMS – Gas Metering Station

GPB – Gas Pipeline Branch

GRS – Gas Regulation Station

IP – Interconnection point

LNG – Liquefied Natural Gas

m³ or cubic meter – unit of volume which in this document for the purposes of determining a natural gas quantity, represents the natural gas quantity in a volume of one cubic meter at 293.15 K (200C) and absolute pressure of 0.101325 MPa.

ME - Ministry of Energy

MPa – Megapascal (unit of pressure)

Natural Gas Transmission – transport of natural gas through the gas transmission networks owned by Bulgartransgaz EAD

PCI – Project of Common Interest

PEC– Primary Energy Consumption

PF – Pigging Facility

SEEGAS – Transregional Cooperation Initiative for Development of an Integrated Natural Gas Market in South-Eastern and Eastern Europe

SEEHyC – South-East European Hydrogen Corridor

TANAP– Trans-Anatolian Natural Gas Pipeline

TAP – Trans-Adriatic Pipeline

TBA – To be announced

UGS – Underground Gas Storage

VA – Valve Assembly

VGC– Vertical Gas Corridor

VTP – Virtual Trading Point

W – Watt (unit of power)

INTRODUCTION

Bulgartransgaz EAD's Ten-year plan for development of the natural gas transmission and storage infrastructure has been prepared pursuant to Art. 81 (d), para. 1 of the Energy Act (EA). It covers the period 2025-2034 and sets out the vision for development of the company as an independent transmission operator and storage facility operator. It is consistent with the main European, regional and national priorities, namely to ensure security of natural gas supply, diversification of natural gas supply sources and routes, and establish a single European free and competitive gas market, support economy decarbonization, implement Europe's climate and environmental policies.

The priority projects and activities of Bulgartransgaz EAD for the period 2025-2034 aim at development, modernization and expansion of the natural gas transmission and storage infrastructure. Their implementation will strengthen Bulgaria's strategic position in the region, contribute to diversification and security of supplies, and create conditions for expanded gasification, as well as decarbonization of the energy sector and economy.

In line with the efforts to reduce carbon emissions, Bulgartransgaz EAD plans projects in the field of hydrogen, including construction of completely new infrastructure for transport of pure hydrogen and retrofitting of the existing one for transport of hydrogen-gas mixtures.

The main objective of the Ten-Year Plan is to ensure transparency and awareness of the future development prospects and the Company projects. It analyses the trends and factors that justify the need for the planned investments, as well as the expected period for their implementation. That provides support to market participants and facilitates making long-term investment decisions.

The implementation of the investment strategy presented in the Plan will create favourable conditions in support of diversification of the sources and routes for natural gas supply and the expansion of its use in the country and the region, bringing significant economic, social and environmental benefits.

The strategy will foster the development of a competitive and efficient gas market, ensuring greater supply and opportunities for market participants. This in turn will promote price efficiency and contribute to development of a liquid and sustainable natural gas market.

Having regard to achieving transparency and balance between the interests of the TSO and the market participants, the Plan is subject to public consultation enabling synchronization of the interrelationships between Bulgartransgaz EAD projects and the development plans of the stakeholders.

The national ten-year network development plans serve as the basis for preparation of the EU Community-wide network development plans, drawn up by the European Network of Transmission System Operators for Gas (ENTSOG).

BULGARTRANSGAZ EAD PROFILE



Compressor Station Nova Provadia

Bulgartransgaz EAD is a sole owner joint stock company, registered on 15 January 2007 by Decision of Sofia City Court. The owner of 100% of its shares is Bulgarian Energy Holding EAD with principal the Ministry of Energy (ME).

By virtue of Decision of the Energy and Water Regulatory Commission (EWRC), Bulgartransgaz EAD is certified independent transmission operator in Bulgaria in line with the requirements of Directive 2009/73/EC concerning the common rules for the internal market in natural gas, Regulation (EC) No 715/2009 on the conditions for access to the natural gas transmission networks and Chapter Eight, (a) of the Energy Act. The Decision was adopted in line with the opinion of the European Commission of 22 April 2015.

A Decision approved by EWRC confirms that Bulgartransgaz EAD meets the criteria for certification and the requirements for independence, namely:

- The Management Board of the independent transmission operator is the competent authority responsible for decisions, related to TSO current activity, the management of the network and the activities, required for preparing TYNDP;
- The Independent Transmission Operator has the right to make independent decisions regarding the assets, required for the operation, maintenance and development of the transmission network and the gas regimes control;
- The requirements for professional independence of the members of the Management Board and the members of the Supervisory Board of Bulgartransgaz EAD have been met;
- Bulgartransgaz EAD has at its disposal the necessary resources including human, technical, financial and physical, required to meet its obligations when carrying out the

natural gas transport and storage activity;

- The company has its own corporate identity, independent IT systems and equipment, independent premises and security access systems thereto, as well as its own external contractors or external consultants for the access to these systems;
- When carrying out its activities, the independent transmission operator provides services that are non-discriminatory for the different network users and does not restrict, distort or prevent competition in production or gas supply.

Bulgartransgaz EAD is a combined gas operator performing natural gas transmission and storage activities. The company is the owner and operator of the gas transmission network infrastructure and the underground gas storage Chiren (Chiren UGS) connected to it.

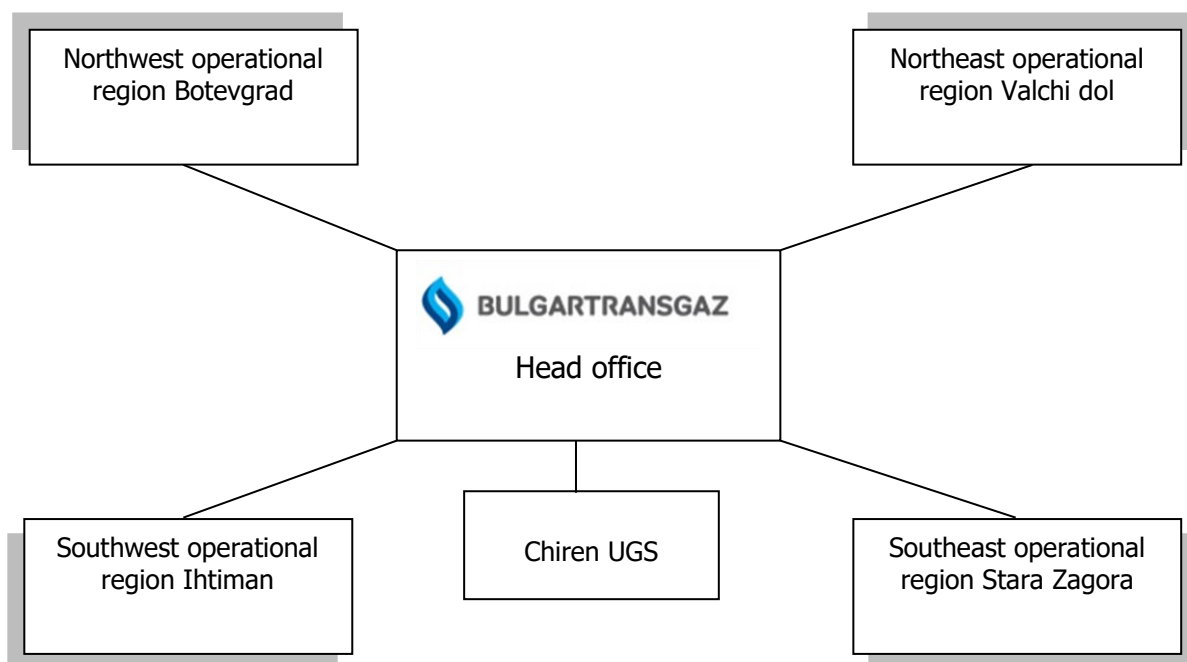
The Company is holder of the following licenses, issued by the Energy and Water Regulatory Commission (EWRC):

- For natural gas transport: Licenses No L-214-06 and No L-214-09 of 29.11.2006
- For natural gas storage: License No L-214-10 of 29.11.2006

The basic requirements for these activities are regulated by the Energy Act and the by-laws harmonized with the European legislation in that field, as well as in the European regulations that are directly applicable.

Bulgartransgaz EAD plays a key role and is responsible for the uniform management, reliable operation and efficient use of the natural gas transmission system, including the gas pipelines, compressor stations and Chiren UGS. The activities include natural gas transmission in compliance with the requirements for gas quality and metering, networks development in accordance with the long-term gas sector forecasts and plans for gas supply and the gas sector development, as well as maintenance, operation, management and development of Chiren UGS. All these services are provided to the users on a level playing field. Engineering, investment and service activities are carried out in the Company.

The organisational structure of the Company includes a Head office and four operational regions - Northwest operational region Botevgrad, Northeast operational region Valchi dol, Southeast operational region Stara Zagora and Southwest operational region Ihtiman. They are in charge of the operational management and maintenance of the network on the respective territory, as well as of Chiren UGS.



Since its establishment, Bulgartransgaz EAD constantly strives to improve the quality of the services offered, while at the same time promote gas market development in Bulgaria and the region. The company makes investments aimed at increasing reliability and development of the natural gas transmission and storage infrastructure. Bulgartransgaz EAD pursues a policy of transparency, non-discrimination and operates in full compliance with the requirements of the applicable European and Bulgarian legislation.

DESCRIPTION OF NATURAL GAS TRANSMISSION AND STORAGE INFRASTRUCTURE



Compressor Station Ihtiman

Gas infrastructure owned by Bulgartransgaz EAD on the territory of the Republic of Bulgaria consists of gas transmission network and an underground gas storage facility in Chiren (Chiren UGS) connected to it.

Gas transmission network infrastructure provides natural gas transport to users in the country, as well as cross-border natural gas transport through interconnections with the neighbouring countries Turkey, Greece, Serbia, Romania and North Macedonia. It comprises of 3 484 km gas pipelines and gas pipeline branches, compressor stations – Kardam, Valchi Dol, Polski Senovets, Rasovo, Provadia, Nova Provadia, Lozenets, Strandzha, Ihtiman and Petrich of 374 MW approximate total installed capacity, electrochemical protection system, pigging facilities (PF), communication system, information system and other auxiliary facilities.

In **Underground Gas Storage Chiren** there are 24 exploitation wells and a compressor station of approximately 31 MW total installed capacity (including the new compressors under the gas storage facility expansion project). As of May 1, 2025, the storage capacity of Chiren UGS is 650 mcm (7,004,400 MWh at 10.776 MWh/1000 m³). The withdrawal and injection capacity, according to the formation pressures and other factors, varies from month to month within the range from 25,324 MWh/d to 46,876 MWh/d.

The main entry and exit points of the Company gas transmission network are the following:

Interconnection point (IP) Negru Voda 1/Kardam – connection between Bulgartransgaz EAD gas transmission system and the gas transmission system operated by Transgaz S.A. (Romania) on the Bulgarian-Romanian border in the area of the village of Kardam, General Toshevo Municipality;

Interconnection point (IP) Negru Voda 2, 3/Kardam – connection between Bulgartrngaz EAD gas transmission system and the gas transmission system operated by Transgaz S.A. (Romania) on the Bulgarian-Romanian border in the area of the village of Kardam, General Toshevo Municipality;

Interconnection point (IP) Kulata/Sidirokastro – connection between Bulgartrngaz EAD gas transmission network for transit transmission and the gas transmission system operated by DESFA S.A. (Greece), located on the Bulgarian-Greek border in the area of Kulata village, Petrich Municipality;

Interconnection point (IP) Strandzha/Malkoclar – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by BOTAS (Türkiye), located on the Bulgarian-Turkish border in the area of the village of Strandzha, Bolyarovo Municipality;

Interconnection point (IP) Strandzha 2/Malkoclar – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by TAGTAS (Türkiye), located on the Bulgarian-Turkish border in the area of the village of Strandzha, Bolyarovo Municipality;

Interconnection point (IP) Kireevo/Zaycar – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by Gastrans (Serbia), located on the Bulgarian-Serbian border in the area of the village of Kireevo, Makresh Municipality;

Interconnection point (IP) Kyustendil/Zhidilovo – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by Nomagas AD (former GA-MA, Macedonia), located on the Bulgarian-Macedonian border in the area of the village of Gyeshevo, Kyustendil Municipality;

Interconnection point (IP) Ruse/Giurgiu – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by TRANSGAZ S.A. (Romania) on the Bulgarian-Romanian border in the area of the village of Marten, Ruse Municipality;

Interconnection point (IP) Stara Zagora – connection between Bulgartrngaz EAD gas transmission network and the gas pipeline (IGB) operated by ICGB AD (Bulgaria), located in the area of the village of Zagore, Stara Zagora Municipality;

Interconnection point (IP) Kalotina/Dimitrovgrad – connection between Bulgartrngaz EAD gas transmission network and the gas transmission system operated by Srbijagas (Serbia), located on the Bulgarian-Serbian border in the area of the village of Kalotina, Dragoman Municipality;

GMS Galata – an entry point from local production of the gas transmission network;

GMS Dolni Dabnik – an entry point from local production of the national gas transmission network;

Entry-exit point GMS Chiren – connection between the gas transmission network and Chiren UGS.

NATURAL GAS MARKET IN THE COUNTRY AND THE REGION



Compressor Station Lozenets

1. NATURAL GAS MARKET IN BULGARIA

1.1. General market overview

Bulgartransgaz EAD implements a consistent and targeted policy to improve connectivity with neighbouring countries by establishing new interconnection points with significant capacity and maximizing capacity at the existing points.

The existing and planned gas infrastructure provide an opportunity for diversification of natural gas supplies both to Bulgaria and to the other countries in the region of Southeast Europe.

1.1.1. Natural gas consumption

Natural gas consumption in Bulgaria in 2024 was 27 851 GWh, which shows about 6% increase compared to the consumption in 2023 (26 303 GWh).

According to data from the overall energy balance of the National Statistical Institute for 2023, natural gas had 12.6% share in the primary energy consumption and 10.7% in the final consumption of fuels and energy.

The share of natural gas in the country's energy balance remains lower than the average level for EU countries, but has the potential for sustainable growth, given its significant role as a transitional fuel to a low-carbon economy, as well as the developing gasification. In the next years, the increase in consumption is expected to continue.

1.1.2. Main natural gas sources

In 2024 the share of natural gas imports in Bulgaria was 99%. Consumption in the country is

mostly ensured by gas imports from Azerbaijan and liquefied natural gas from terminals in the region. Local production in the country remains low. In 2024, about 0.13% of natural gas consumption was provided by local production from Galata field.

Bulgartransgaz EAD works consistently to improve interconnectivity by increasing the technical transmission capacities at interconnection points and provide opportunities for gas supplies from various new sources, including LNG.

In implementation of the European objectives to discontinue fossil fuel supplies from the Russian Federation, Bulgaria and the region increasingly rely on the Southern Gas Corridor and LNG terminals in Southeastern Europe for natural gas supplies.

In recent years, significant investments were made in rehabilitation, modernization and expansion of the Bulgarian gas transmission network, which improved the interconnectivity level, efficiency, reliability and flexibility of the transmission system.

Significant transmission capacities to and from Bulgartransgaz EAD system have been secured at the borders with all neighbouring countries. The transmission capacity is unidirectional only on the border with the Republic of North Macedonia where the IP Kyustendil/Zhidilovo only is the only entry point for natural gas supplies.

The implemented projects contribute to diversification of the supply sources, the provision of a secure access to additional gas quantities from the Central and South-Eastern Europe region and the establishment of a liquid, integrated and interconnected natural gas market at European level.

Bulgartransgaz EAD manages its gas transmission infrastructure as a single system with one balance zone, respectively one Virtual Trading Point (VTP). The availability of a single balancing zone and a single VTP provides opportunity to network users and gas traders to work with a single balancing portfolio.

In 2023 and 2024 natural gas quantities by sources of supply were as follows:

No	Type of supply	2023		2024	
		Quantity, GWh	Relative share	Quantity, GWh	Relative share
1.	Imported natural gas according to entry interconnection points	26,246	99.8%	27,816	99.87%
2	Natural gas locally produced	57	0.2 %	35	0,13%
TOTAL		26,303	100 %	27,851	100 %

Imports from various sources of supply of pipeline gas and LNG for the country and the region are emerging as a permanent trend that will continue to grow.

The REPowerEU plan to reduce the European Union's dependence on Russian fossil fuels and accelerate the clean energy transition necessitates further increase in gas pipeline quantities from the Caspian region and LNG from alternative sources such as the USA, Qatar, Egypt, Norway, Algeria, Nigeria and other reliable suppliers to European countries. LNG terminals

will continue to play a key role in diversifying the sources and enhancing the European energy security.

1.1.3. Main natural gas consumers and market participants

The main participants on the gas market in Bulgaria are the following:

- Bulgartransgaz EAD – a combined gas operator licensed to perform natural gas transmission and storage activities;
- ICGB AD - an independent natural gas transmission operator, licensed to transport natural gas;
- Bulgargaz EAD – public supplier of natural gas in Bulgaria responsible for ensuring natural gas supply to end suppliers and to persons holders of a license for heat production and transmission, at prices and conditions approved by the EWRC;
- Natural gas traders – make transaction for natural gas supply with the public supplier, end suppliers, customers, other natural gas traders, production companies, natural gas storage companies and the combined operator;
- Balkan Gas Hub EAD and Bulgarian Energy Trading Platform AD - operators of trading platforms, ensuring trading environment for an organized natural gas exchange market on a bilateral principle;
- Gas distribution companies – performing both natural gas supply from end gas supplier and natural gas distribution activities, supply natural gas to customers connected to their networks. It is their obligation to construct and develop the gas distribution networks according to the long-term business plans and conditions approved by SEWRC;
- Non-household natural gas customers connected to the gas transmission networks;
- Household and non-household natural gas customers connected to the gas distribution networks.

Production companies and two main groups of customers - gas distribution companies and non-household users are connected to Bulgartransgaz EAD gas transmission network.

The main users of natural gas transmission services in the country are the public supplier Bulgargaz EAD, trade companies from the Energy and Chemistry sectors, end suppliers, as well as other users of the gas transmission network and natural gas traders.

The "natural gas distribution" and "natural gas supply" activities by end suppliers to customers connected to the distribution networks are being carried out by regional and local gas distribution companies, operating in licence regime and price regulation conditions. Overgas Mrezhi AD, followed by Aresgas AD and Citigas Bulgaria EAD have the largest market share.

At the end of 2024 on the territory of the Republic of Bulgaria 25 licensed gas distribution companies operate in 36 licensed territories, covering 174 municipalities (65% of all municipalities in the country).

The share of household gas supply in the country is still lower compared to the average level of EU countries, but there is potential to increase. At the national level, programmes are being implemented to promote household gasification; the development of natural gas distribution infrastructure continues.

The total number of customers of the gas distribution companies as of 31.12.2024 is 162,663, of which 8,573 are non-household and 154,090 household customers. The number of customers has grown by 3% in one year - from 157,995 in 2023 to 162,663 in 2024. Household customers have increased by 1.6% and non-household - by 3%.

Activities aimed at increase of the degree of liberalization, liquidity and diversification of the national gas market are at a different stage of implementation.

Balkan Gas Hub EAD (BGH) trading platform has been operating since the end of 2019, and as of February 2025, over 100 participating companies have been registered. As a result of Balkan Gas Hub EAD operations, in the last five years gas liquidity in the country has significantly and sustainably increased, the practices of exchange trading and increasing role and share of the spot market (within the day and the day-ahead) have been successfully introduced.

The natural gas quantities traded on the organized market of BGH in 2024 were in the amount of 42,721,331 MWh (a decrease of 6.57% compared to the quantities traded in 2023 in the amount of 45,723,956 MWh), of which 16,118,475 MWh in the short-term segment (an increase of nearly 26% compared to the quantities traded in the spot segment in 2023 in the amount of 12,795,366 MWh). The products in the short-term segment are standardized short-term products (STSPs) within the meaning of Regulation 312/2014 establishing a Network Code on Gas Balancing of Transmission Networks. They have been developed in accordance with the requirements of Art. 7 of the Regulation and are intended to meet the needs of transmission system operators for balancing actions, as well as the needs of traders for balancing their individual portfolio. The quantities under long-term products for 2024 amount to 26,602,856 MWh (a decrease of 19.21% compared to the quantities traded in 2023 in the amount of 32,928,590 MWh).

The total number of transactions completed for 2024 is 30,169 (or 18.66% more than those for 2023, which is 25,425). By segments - in 2024 both increase - the number of transactions in the short-term segment (28,315 in 2024, compared to 23,603 in 2023, or nearly 20% more) and the number of transactions in the long-term segment (1,854 in 2024, compared to 1,822 in 2023, or 1.76% more). An important factor for the increased liquidity is the number and activity of BGH members. Most of them are leading Bulgarian companies in the field of natural gas trade. About 41% of the members on BGH market are foreign companies among which are leading European traders operating in the EU single gas market. A considerable number of the foreign customers are from Bulgaria's neighbouring EU member states - Greece and Romania, as well as from other countries in South-Eastern and Central Europe.

Balkan Gas Hub EAD operation is fully in line with the European objectives on establishing an interconnected and integrated pan-European gas market and is in support of the plans for gas infrastructure development in Europe. The establishment of a gas trading exchange is actively supported by the European Commission and is in strict compliance with the needs identified by the High Level Group for Gas Connectivity of Central and South-east Europe (CESEC).

1.1.4. Bulgartransgaz EAD transport and storage activities

Bulgartransgaz EAD transport and storage activities are regulated and carried out in line with the licenses issued by the EWRC. The basic requirements for these activities are regulated by the Energy Act and the by-laws. As a transmission system operator of an EU member state,

Bulgartransgaz EAD fulfils the requirements of the applicable European legislation and follows the policies in the field of natural gas and climate.

Natural gas transport

The company has concluded access and transport contracts with about 120 natural gas trading companies, with the trend of constant increase in their share in the transported quantities.

Data on natural gas quantities transported through the gas transmission infrastructure of Bulgartransgaz EAD for 2023 and 2024 is presented in the following table:

No	Type	Quantity 2023 (MWh)	Relative share	Quantity 2024 (MWh)	Relative share
1	Natural gas transport to exit points in the country	26,302,903	15.30 %	27,850,701	13.73 %
2	Natural gas transport to cross-border points with neighbouring countries	145,572,930	84.70 %	174,925,010	86.27 %
Total:		171,875,833	100.00 %	202,775, 711	100.00 %

In 2024, there is a significant increase compared to 2023 in gas quantities for transport to cross-border points. This is due to the increasing demand for gas transport along routes through Bulgaria to the neighbouring countries and the region, as well as to exit points in the country.

Natural gas storage

Chiren UGS plays a major role in compensating for the seasonal fluctuations in natural gas consumption and providing an emergency reserve in force majeure situations.

The total injected natural gas quantities in Chiren UGS in 2024 amounted to 3,295 GWh, with 100% full storage facility in the end of the injection period. The actual withdrawn quantities for the year are 3,825 GWh.

1.1.5. Local natural gas production

Natural gas production is carried out by Oil and Gas Exploration and Production Plc. and Petroceltic Bulgaria EOOD.

Since 2004 the company Petroceltic Bulgaria EOOD commenced natural gas local production firstly from Galata field and then from the newly discovered fields Kaliakra and Kavarna with access to the gas transmission network secured by Bulgartransgaz EAD at entry point GMS Galata.

The current exploitation of gas fields in the country is limited. However, future production may increase considering the ongoing exploration activities, including in the Black Sea waters.

1.2. Market potential and development prospects

The EU energy policy is based on the principles of decarbonisation, competitiveness, security of supply and sustainability. Bulgaria's strategic geographical location, well-developed gas infrastructure with a high level of interconnectivity and significant transmission capacity, determine the development of the market potential in the country. The implemented infrastructure projects and those under implementation strengthen the country's key role in improving energy security and diversification of natural gas supply sources and routes in the region.

Despite its relatively low share in final energy consumption, natural gas is a significant natural resource with potential to increase its share in the country's total energy consumption in the coming years, as well as with a significant role as a transitional fuel in the process of decarbonisation and transition to a low-carbon energy and economy.

In the following years, natural gas consumption in the country is expected to increase, also as a result of development of new gas-fired power generation plants. The development of new gas generation projects has the potential to provide greater flexibility and security in the energy system and will play an important role in its balancing and compensation for the variable production, especially given the growing share of energy from renewable sources.

The company's policy is aimed at adapting and effectively implementing key activities in the context of the energy transition, as well as in fulfilling the European goals to reduce carbon emissions and achieve a more sustainable and cleaner energy system. In this regard, natural gas will remain a strategically important energy source, ensuring reliability and a smooth transition to a low-carbon economy.

By gas infrastructure expansion and implementation of new technologies in natural gas transmission and storage activities, Bulgartransgaz EAD will support the country's energy security and facilitate the sector's adaptation to new regulatory requirements and market mechanisms.

The promotion of gasification, the expansion of distribution companies networks and the tendency to reduce consumption of solid and liquid fuels at the expense of natural gas are a prerequisite for an increase in the use of natural gas in the household sector.

In 2023, Bulgartransgaz EAD carried out together with the neighbouring gas transmission network operators a non-binding assessment of the demand for additional capacity for interconnection points in accordance with the requirements of Regulation (EU) 2017/459 establishing a Network Code on capacity allocation mechanisms in gas transmission systems.

The results showed an expected significant increase in demand for natural gas transmission capacity in the south-north direction in synergy with the growth of gas flows, as well as a need to increase transmission capacities along the Vertical Gas Corridor.

In this regard, in implementation of the objectives of the Memorandum on the Vertical Corridor and in accordance with the requirements of Regulation (EU) 2017/459, Bulgartransgaz EAD started joint technical studies with DESFA S.A., Transgaz S.A. and ICGB AD for increase of transmission capacities at the common interconnection points. As a result, the necessary projects aimed at increase of the technical capacities at interconnection points IP Kulata/Sidirikastro, IP Stara Zagora and IP Negru Voda 1/Kardam have been identified.

Considering the contribution of the Vertical corridor projects to implementation of the EU energy policy objectives and their importance for ensuring security of supply and diversification in the region, in implementation of the Decision of the National Assembly of March 14, 2024, promulgated in State Gazette, issue 23 of March 19, 2024, Bulgartransgaz EAD has taken the necessary actions to implement the projects on increase of natural gas transmission capacity at IP Kulata/Sidirokastro and IP Negru Voda/Kardam:

- Increase of the total technical capacity at IP Kulata/Sidirokastro in direction from Greece to Bulgaria by 35.4 GWh/d up to a total of 102 GWh/d.
- Increase of the total technical capacity at IP Negru Voda 1/Kardam in direction from Bulgaria to Romania by 137.2 GWh/d up to a total of 295 GWh/d.

In the event of commercial interest, Bulgartransgaz EAD is ready to launch activities on an expanded version of the project on increase of natural gas transmission capacity in direction from Greece to Bulgaria at IP Kulata/Sidirokastro with additional 69 GWh/d up to a total of 171 GWh/d.

The Vertical corridor initiative is supported by the European Commission and the USA partners and is key to increase the security of natural gas supplies for the European Union and the countries of the Energy Community. Parties to the Memorandum of Understanding are Bulgartransgaz EAD, DESFA S.A., Gastrade S.A., ICGB AD, Transgaz S.A., FGSZ Ltd., Eustream a.s., Gas TSO of Ukraine LLC and VestMoldTransgaz S.R.L.

Ensuring the possibility of transporting additional quantities of LNG from the terminals in the region and natural gas from the Caspian basin from south to north along the gas transmission networks of Greece, Bulgaria, Romania, Hungary, Slovakia, Ukraine and Moldova will contribute significantly to improving the security of supplies in the wider region.

With the realization of the projects for new gas transmission infrastructure, a significant increase in natural gas quantities from alternative sources is expected, to be transported through Bulgartransgaz EAD gas transmission infrastructure both, for Bulgaria and the countries of the region.

In addition, as an important step to ensure conditions for unrestrained cross-border natural gas transport and security of supply for the countries of the CESEC region, during a Ministerial meeting in Budapest on 29.10.2024, Bulgartransgaz EAD, together with 9 other gas transmission system operators, including participants in the Vertical corridor initiative, signed a Memorandum of Understanding on harmonization of gas quality requirements within the framework of CESEC.

Bulgartransgaz EAD also continues implementation of the key project for expansion of Chiren UGS. It is aimed at increase in stages of the active gas volume up to 1 bcm and of the daily injection and withdrawal capacity up to 8-10 mcm/d. The increased capacity will ensure the security of natural gas supply and will contribute to enhancing competition and access to natural gas from alternative sources, including liquefied natural gas using the existing and planned terminals in the region. In this way, the project will contribute to enhancing the liquidity of gas markets in Bulgaria and the region from South-Eastern and Eastern Europe.

After commissioning of the new above-ground facilities in March 2025 and the new gas pipeline connecting the storage facility to the gas transmission system in November 2024, conditions are in place to launch activities for capacity increase in stages at UGS as of 2025 injection season. In this regard, as of May 1, 2025, the capacity of the Chiren UGS has been increased by 100 mcm to a total of 650 mcm. The storage capacity will be gradually expanded in parallel with construction of the new wells. By the end of 2027 all of the required infrastructure is expected to be made available to reach the targeted parameters of the expansion.

Bulgartransgaz EAD participates with 20% of the share capital of Gastrade S.A. - an operator of Alexandroupolis Independent Natural Gas System (INGS). The terminal has a regasification capacity up to 5,5 bcm of natural gas yearly. Bulgaria's participation in the project is strategically important for diversification and security of energy supply to Bulgaria and the countries in the region.

Natural gas has an important role as a transitional fuel in the policy of the European Union to cut greenhouse emissions by 2030 and decarbonisation and achieving carbon neutrality by 2050. In this regard Bulgartransgaz EAD plans a project for a high-pressure gas transmission infrastructure to supply consumers in Maritsa East Basin.

The Company also develops projects in the hydrogen area related to the feasibility assessment and subsequent retrofitting of existing infrastructure to ensure suitability for blending natural gas with hydrogen and to build an all-hydrogen infrastructure on the territory of Bulgaria. The described perspectives are in the basis of Bulgartransgaz EAD objectives and investment plans and are reflected in the overall company policy aimed at establishing Bulgaria as a significant regional gas distribution hub.

2. NATURAL GAS MARKET IN THE REGION

The implementation of the large-scale projects in the region for development of gas transmission infrastructure, the increase of gas storage capacities, the increase of the gas transmission capacities at the interconnection points, the development of new LNG terminals, as well as the potential of local production expects to see the increase in natural gas consumption in the country and the region in the conditions of high levels of competition and liquid markets.

Improvement of interconnectivity in the region and the provided alternative supply routes provide energy consumers with all necessary conditions to benefit from the opportunities of Balkan Gas Hub EAD and the significant new infrastructure projects.

In turn, this contributes to increased energy security, diversification of supply sources and achieving market integration of the countries in the region.

The review of natural gas markets in the neighbouring countries outlines the main trends for development in the context of diversification and more tangible price competition.

2.1. Greece



Gas infrastructure in Greece. Source: ENTSOG

In 2024, natural gas consumption in Greece amounted to 6.2 bcm, recording a significant growth of over 30% compared to 2023 (4.7 bcm). Electricity generation accounts for a significant share of annual gas consumption. Consumption in the country is ensured mostly by imports through Bulgaria, the Trans-Adriatic gas pipeline and by the liquefied natural gas terminals.

The Greek gas transmission operator DESFA S.A. develops projects for increase of the technical capacity for transmission of the national gas transmission system of Greece, through reinforcement of the pipeline network, expansion of the existing and construction of new compressor stations. Regarding the Vertical gas corridor initiative, DESFA S.A. plans to increase the capacity on its side of IP Kulata/Sidirokastro by 35.4 GWh/d in direction from Greece to Bulgaria, according to the increase planned by Bulgartranzgaz EAD. This will increase the capacity from Greece to Bulgaria at IP Kulata/Sidirokastro up to a total of 102 GWh/d. The prerequisites for transport of additional natural gas quantities from the south to the north will be created.

Implementation of the VGC initiative will help meet the growing natural gas demand in the region by various sources, including LNG, and significantly improve the conditions for diversification and the security of gas supplies.

The construction of new LNG terminals is among the priorities of the country, relying

increasingly on sources in the region of the US, the Mediterranean, the Middle East and Central Asia. Currently there are two operating LNG terminals in Greece – in Revithoussa and the newly launched in 2024 in Alexandroupolis. The total regasification capacity is expected to reach up to 30,5 bcm/y thanks to the planned new LNG terminals in the country.

Existing and planned LNG infrastructure in Greece:

Facility	Year of commissioning	Type	Operator	Regasification capacity (bcm/year)
Revithoussa LNG Terminal	1999	On-shore	DESFA	7
Alexandroupolis LNG Terminal	2024	Floating	Gastrade	5.5
Dioriga Gas FSRU	TBA	Floating	Dioriga Gas	2.5
Thrace LNG	TBA	Floating	Gastrade	5.5
Argo FSRU	TBA	On-shore	Medgas	5.2
Thessaloniki FSRU	TBA	Floating	Elpedison	4.82

Gas Interconnection Greece-Bulgaria (IGB)

Interconnection Greece-Bulgaria, run into commercial operation in October 2022, has a transmission capacity in direction from Greece to Bulgaria of up to 3 bcm/year. An option to increase the total technical capacity up to 5 bcm/year is being considered.

Trans-Adriatic Pipeline (TAP)

The 878 km long Trans-Adriatic Pipeline (TAP) is part of the Southern Gas Corridor, transporting natural gas to Europe from Shah Deniz II field in Azerbaijan. The current annual capacity is 10 bcm/y. The pipeline is connected to the Trans-Anatolian Gas Pipeline (TANAP) at the Turkish-Greek border and passes through Greece, Albania and the Adriatic Sea, reaching its end point in Southern Italy.

Bulgaria has connectivity with TAP along two independent routes - via DESFA S.A. network and via IGB. Thanks to this connectivity, network access to Caspian natural gas supplies along TAP have all neighbouring countries, which further contributes to gas availability from alternative sources and the security of the energy supply to the region.

EastMed

Various options for the project are being considered, including a route involving construction of about 300 km offshore gas pipeline between Israel and Cyprus, as well as natural gas liquefaction facilities in Cyprus. The implementation of the project will provide an opportunity to supply liquefied natural gas to the European markets from the Eastern Mediterranean gas fields.

Revithoussa LNG Terminal

Revithoussa liquefied natural gas terminal has annual regasification capacity up to 7 bcm and 225 000 thousand m³ storage capacity. Higher liquidity in the natural gas market is achieved through it and it contributes to security of gas supply to Greece and the region.

As of 2019, the terminal enables the supplies of liquefied natural gas to the Bulgarian market,

including from the USA.

The Alexandroupolis Independent Natural Gas System (INGS)

The LNG terminal in Alexandroupolis, where Bulgartransgaz EAD is a shareholder with 20% of the capital of Gastrade S.A., was run into commercial operation in October 2024.

The capacity of the terminal for re-gasification and supply to the Greek gas transmission system amounts to 5.5 bcm/y. It has been booked at almost 100% for the first 6 years of operation, which significantly contributes to increase the security of supplies and diversification of natural gas sources.

The terminal is of key importance for the security of supplies and diversification of natural gas sources in the regional plan, including from countries producing liquefied natural gas, such as Algeria, Qatar, the USA and other reliable sources. It is in synergy with the expansion of Chiren underground gas storage facility that will provide more flexibility and security to the natural gas market in Bulgaria and the region.

2.2 Türkiye



Gas infrastructure in Türkiye Source: ENTSG

In 2024, natural gas consumption in Türkiye amounted to approximately 52.9 bcm, which is about 4% higher than in 2023 (50.3 bcm). During the winter period, peak consumption reached about 300 mcm/day. Natural gas demand is expected to continue to increase in the coming years due to economy growth and increase in country's population. Natural gas occupies the largest share in the total final energy consumption by households, as well as a significant share in the production of electricity.

Consumption in the country is mainly provided by imports from Russia, Azerbaijan, Iran and Algeria under long-term contracts.

In 2024, the Turkish company BOTAS S.A. concluded long-term LNG supply contracts with ExxonMobil, Shell and Total Energies, due to expiry of the long-term pipeline gas supply contracts with Russia in 2025 and with Iran in 2026.

Considering the start of operation of the newly discovered offshore gas fields with significant reserves, part of the demand in the country is expected to be covered by local production. In 2024, record gas production was reported in Turkey, amounting to 2.3 bcm, and the trend is to continue to increase. Turkey is producing natural gas from the largest field in the Black Sea, Sakarya. The field's reserves are estimated at 710 bcm. Phase 2 is planned to be implemented, which will enable increase in the production rate from the field, and the withdrawn quantities are expected to satisfy 30% of the country's demand.

In January 2025, Turkey launched activities to search, explore and evaluate new gas fields in the Black Sea.

In June, BOTAS and SOCAR extended their natural gas supply agreement for another 6 years until the end of 2030. In this way, Turkey will continue to supply Azeri natural gas to Europe as well.

Deliveries from Shah Deniz II field in Azerbaijan are made through the Trans-Anatolian Gas Pipeline (TANAP). The first stage capacity is 16 bcm/y, of which 10 bcm/y are transited to the European markets and 6 bcm/y are intended to cover Turkish domestic consumption. It is

planned to expand the pipeline and reach a capacity of up to 32 bcm.

Türkiye has five liquefied natural gas terminals (three floating and two on-shore) with a total regasification capacity of about 53 bcm/y, and expansion is planned for some of them in the forthcoming years.

LNG infrastructure in Türkiye:

Facility	Year of commissioning	Type	Operator	Regasification capacity (bcm/year)
Marmara Ereğlisi LNG Terminal	1994	On-shore	BOTAS	12.80
Aliaga İzmir LNG Terminal	2006	On-shore	EgeGaz	13.80
Aliaga Etki LNG Terminal (Turquoise)	2016	Floating	Etki Liman	7.30
FSRU Dörtyol (Ertuğrul Gazi)	2018	Floating	BOTAS	9.70
FSRU Gulf of Saros	2023	Floating	BOTAS	7.62

LNG share in Türkiye for 2024 was 29% of the total import and amounts to 17 bcm. The main sources of LNG supplies for the country are Algeria, USA, Nigeria, Egypt, etc.

In January 2024, Bulgartransgaz EAD and BOTAS S.A. Signed an Interconnection Agreement for the IP Strandzha/Malkoclar. This is of key importance for the diversification of natural gas sources not only for Bulgaria, but also for the regional and European gas markets. By Türkiye's gas transmission network, access shall be provided to natural gas from local fields, Azerbaijan, Iran and the global LNG market through Türkiye's regasification terminals.

2.3 Romania



Gas infrastructure in Romania Source: ENTSOG

The consumption of natural gas in the country in 2024 amounted to 9.9 bcm, recording an increase of about 4% on an annual basis compared to 2023. This number includes a decrease in imports at the expense of the amount of natural gas produced from local fields, which has increased compared to 2023. Underground gas storage is provided by six underground storage facilities with a total active capacity of 3,2 bcm.

In the second quarter of 2024, Romania became the largest natural gas producer in the EU, with produced quantities amounting to 2.3 bcm.

Local production in the country is expected to continue to increase in the coming years, reaching 18-20 billion m³ in 2027.

Following implementation of Bulgartransgaz EAD project to increase gas transmission capacity by 137.2 GWh/d from Bulgaria to Romania at IP Negru Voda 1/Kardam in Q2 2026, Transgaz S.A. has declared technical readiness to increase the entry capacity at the point within the same period.

Within the framework of the Vertical gas corridor initiative, Transgaz S.A. plans projects to increase gas transmission capacity from Romania to Hungary at IP Csanádpalota and from

Romania to Ukraine at IP Isaccea/Orlovka. Their implementation will contribute to improve diversification and increase security of supplies to the countries of Central and Eastern Europe.

In August 2024, a Memorandum of Understanding was signed between Romania and Serbia for construction of an interconnection gas pipeline with a bidirectional transmission capacity of 1.6 bcm/year.

2.4 The Republic of North Macedonia



Gas infrastructure in the Republic of North Macedonia. Source: ENTSG

In 2024 natural gas consumption in the Republic of North Macedonia amounted to approximately 310 bcm, which is 10% decrease on an annual basis compared to 2023 (350 bcm).

On the territory of the country, Nomagas AD Skopje carries out the activities of transmission and management of the transmission system for natural gas. The high-pressure gas infrastructure supplies mostly the area of the city of Skopje. The natural gas market is in a process of development and at the moment it is mainly used in the industrial sector and local heating companies. Due to the lack of gas transmission infrastructure, consumers in the south-eastern part of the country are supplied with compressed natural gas imported from Bulgaria.

The Ministry of Economy of North Macedonia estimated that natural gas consumption will increase significantly over the next years after the construction and run into operation of new co-generation combined heat and power plants (CHP) and the realisation of the separate phases of the national project for the Gasification of the Republic of North Macedonia.

In this regard, the Republic of North Macedonia and Albania concluded a Memorandum of Understanding in the field of energy to strengthen the cooperation in planning a new gas infrastructure, renewable energy and construction of a new LNG terminal in Vlora.

An Interconnection agreement for Kyustendil/Zhidilovo point has been concluded between Bulgartransgaz EAD and NOMAGAS AD. North Macedonia does not have own natural gas fields and storage facilities. Kyustendil/Zhidilovo is the only entry point for natural gas supplies in the country, through which North Macedonia has access to alternative gas sources, including LNG, as well as to natural gas storage services in Chiren underground gas storage, owned by Bulgartransgaz EAD.

The country is working to improve interconnectivity by construction of new interconnections with neighbouring countries.

A final investment decision has been made for implementation of gas interconnection between Greece and North Macedonia. The project includes construction of a gas pipeline of 123 km total length between Nea Messemvria and Negotino, of which 68 km are on the territory of the Republic of North Macedonia. The initial gas pipeline capacity will be 1.5 bcm/y with a possibility to rise up to 3 bcm/y. The project is co-financed by Western Balkans Investment Framework, with the aim of its run into commercial operation in 2026.

A project in the conceptual phase is the construction of a second interconnection between the gas transmission systems of Bulgaria and North Macedonia with Petrich-Strumica route. Project implementation will provide an additional route for natural gas supplies to North Macedonia, increasing the diversification and security of supplies to the country.

2.5. Serbia



Gas infrastructure in Serbia Source: ENTSOG

Natural gas consumption in Serbia in 2024 remained approximately 3 bcm. Natural gas production in Serbia is carried out in the region of Vojvodina by the company Naftna Industrija Srbije. Over 80% of natural gas consumption in Serbia is provided through imports along the gas transmission network of Bulgartransgaz EAD, and the rest comes from local production.

Banatski Dvor is the only gas storage facility on the territory of Serbia, which has a storage capacity of 450 million m³. A project is planned to expand the gas storage up to 750 million m³. In order to increase the country's energy security, options are being considered for further increase of Banatski Dvor UGS capacity, as well as construction of new gas storage facilities in Northern and Central Serbia.

At the end of 2023, Bulgaria-Serbia gas interconnection (IBS) was run into operation, providing a new route for natural gas supplies to Serbia.

Serbia has an agreement signed with Azerbaijan for supply of up to 400 million m³ gas per year until 2026, and from 2027 there is a possibility these quantities to increase to 1 billion

m³.

On September 26, 2024, a contract was signed between SOCAR and Srbijagas for supply of additional quantities of up to 1 million m³ for the winter period 2024-2025, which are essential to satisfy consumption in the country. The supplies are transported through Bulgaria-Serbia gas interconnection (IBS).

In August 2024, a Memorandum of Understanding was signed regarding the construction of a gas connection for bidirectional transmission between Serbia and Romania with 1.6 billion m³/year capacity.

The active cooperation between Serbia and Hungary in the field of natural gas storage continues, also for storage of larger natural gas volumes in Hungarian gas storage facilities by Serbian market participants.

2.6 Current status, market potential and development prospects

According to data of the International Energy Agency (IEA), the world natural gas consumption in 2024 reached a new record of 4,2 trillion m³ which is a rise of over 2,5% compared to 2023 (4,09 trillion m³). In 2025, global natural gas consumption is expected to grow by around 2.3% and reach 4.3 trillion m³, which will be due mostly to the rapidly developing Asian markets.

According to Eurostat data, in 2024, gas consumption in the EU increased slightly by 0.6% compared to 2023 and reached 332 billion m³.

LNG imports continue to occupy a significant share of the total natural gas imports in the EU. According to Eurostat data, LNG imports reached 108.3 billion m³ in 2024. The main LNG suppliers to European markets are the USA (32.8 billion m³), Algeria (23.8 billion m³), Russia (15.3 billion m³), Qatar (11.3 billion m³) and Nigeria (8.7 billion m³).

In 2024, the share of Russian gas imports to the EU decreased and amounted to about 7% of total imports. Efforts are focused on diversifying the sources and increasing the natural gas supplies from reliable suppliers, as well as optimizing the existing gas transmission infrastructure and LNG terminals.

The EU is expanding its natural gas imports from various sources such as Norway, the USA, North Africa, Azerbaijan, Algeria, Qatar, the UK and other alternative suppliers. In 2024, the imported quantities from Norway and the USA reached up to 127.2 bcm, which represents approximately 30% of the total gas imports into the EU.

The concept of enhancing the EU's energy security envisages increasing the supply of LNG to member states by building infrastructure, ensuring access of domestic markets to the global LNG market, as well as overcoming infrastructure bottlenecks. The share of LNG in EU imports is expected to continue to grow in the short and medium term.

In the last years, Bulgartransgaz EAD has made important investments in the rehabilitation, modernization and capacity increase of the existing gas infrastructure. The company is actively working to increase the energy security by improving the interconnectivity with the neighbouring countries and creating the conditions to accelerate the process of diversification of natural gas supply sources and routes and increasing the energy security.

The network of Bulgartransgaz EAD for customers in the country and the neighbouring markets

is used for the transport of significant supplies from various sources, such as Azerbaijan, the USA and others, including supplies of liquefied natural gas. The Alexandroupolis LNG terminal and other terminals in the region further contribute to increasing the security of supply, diversification and competition for the benefit of end-users.

The development of the interconnectivity between Bulgarian and the countries from the region has a significant importance to achieving a market integration against the backdrop of increased demand for natural gas in the region.

The provision of sufficient capacity at the interconnection points along the Vertical corridor will enable transport of the increasing natural gas quantities from the region's LNG terminals, in synergy with the observed significant growth in gas flows from the south to the north resulting from the diversification and security of supplies policy to the countries of South-Eastern, Eastern and Central Europe.

This will enable customers in South-Eastern, Eastern and Central Europe to get additional quantities of natural gas from the LNG terminals and the Southern Gas Corridor.

The Vertical Gas Corridor initiative is fully in line with the REPowerEU plan and the goal of ending the EU's dependence on imports of Russian energy sources. The projects planned by Bulgartransgaz EAD with a positive cross-border effect will lead to increased gas transmission capacities from Greece to Bulgaria, as well as from Bulgaria to Romania and North Macedonia, thus creating the conditions to boost the diversification in the region and the security of supply.

Chiren UGS expansion project is also in synergy with the LNG terminal near Alexandroupolis, as well as with all other Bulgartransgaz EAD's projects. Providing additional storage volume will promote natural gas trade, increase market competition and contribute to liquid gas market functioning. The implementation of the project will enable gas traders and consumers in the region to fully benefit from the dynamic development and competitive advantages provided by the LNG market.

The adopted approach for gradual expansion of the storage facility allows its capacity to be increased by 100 mcm to a total of 650 mcm even as of May 1, 2025. The gradual increase in capacity is planned to continue, in parallel with construction of the new wells, and by the end of 2027 all the necessary infrastructure to be available in order to achieve in stages the target parameters of the expansion - increase of the active gas volume up to 1 bcm and of the daily withdrawal and injection capacities up to 8-10 mcm/day.

Bulgartransgaz's projects for capacity increase in stages of Chiren UGS and rise of the technical capacity at the interconnection points will contribute to achieving a higher degree of market integration and ensuring the natural gas supplies for the country and the region, providing access to various natural gas sources including LNG terminals.

Developing its gas transmission infrastructure and storage capacity and providing new supply routes and cross-border transmission of natural gas, Bulgartransgaz EAD responds adequately to the tendency for increased flows of gas from south to north and diversification of supply sources as well as with regard to the pan-European priorities in the climate and energy sector.

The implementation of the planned infrastructure projects in the country and the region will lead to stable integration of the gas market, ensure connectivity with the gas hubs in Central

and Eastern Europe, as well as facilitate access to new sources. Favourable conditions for diversification will be created respectively reducing the energy dependency, which will also lead to an increase in the gas volumes traded on the gas exchange.

In view of the expected changes resulting from the Green Deal and the achievement of the indicative targets for 2030 and 2050, activities related to the EU's energy transition trends are under way by facilitating the entry of renewable and low-carbon gases, including hydrogen.

Some countries have already developed strategies and roadmaps for the implementation of hydrogen in the existing infrastructure.

As a responsible company, Bulgartransgaz EAD welcomes the European Union's plans for decarbonisation of the energy and industrial sector and strives to be adequate to the adopted pan-European priorities in the climate and energy field. In this regard, the Bulgarian TSO, since 2021 participates in European Clean Hydrogen Alliance and European Hydrogen Backbone, initiatives aimed at widespread implementation of hydrogen technologies and establishment of a model of pan-European hydrogen transmission infrastructure.

Bulgartransgaz EAD is also an active participant in the initiative to create a European Network of Network Operators for Hydrogen (ENNOH). Together with other European TSOs, Bulgartransgaz EAD participates in the constitution of ENNOH aimed at establishing cooperation between operators, implementing the newly introduced regulatory framework, synchronizing views and join efforts related to the progress in development of hydrogen networks and decarbonisation of the energy sector, in synergy with the EU mid-term and long-term objectives.

In the context of Hydrogen Roadmap Europe and in line with the energy and climate strategic goals and priorities of Bulgaria, Bulgartransgaz EAD envisages:

- retrofitting of the existing gas transmission infrastructure and ensure suitability for operation with up to 10% hydrogen;
- new clean hydrogen transport infrastructure in two phases: between Sofia region and the Bulgarian-Greek border in Kulata region, and from Sofia region towards Romania, near Ruse.

On 28.11.2023, the first list of EU projects of common and mutual interest was published on the grounds of Regulation (EU) 2022/869 on guidelines for trans-European energy infrastructure. The list includes a total of 166 projects that contribute to the acceleration of the energy transition and the achievement of the Union's energy and climate goals by 2030 and 2050. Bulgartransgaz EAD has a project for the construction of hydrogen transmission infrastructure included in the list under number 10.3.2 "Internal infrastructure in Bulgaria in direction to the border with Greece", which is part of the interconnections for hydrogen in Central, Eastern and South-Eastern Europe.

NATURAL GAS TRANSPORT AND STORAGE



Chiren UGS

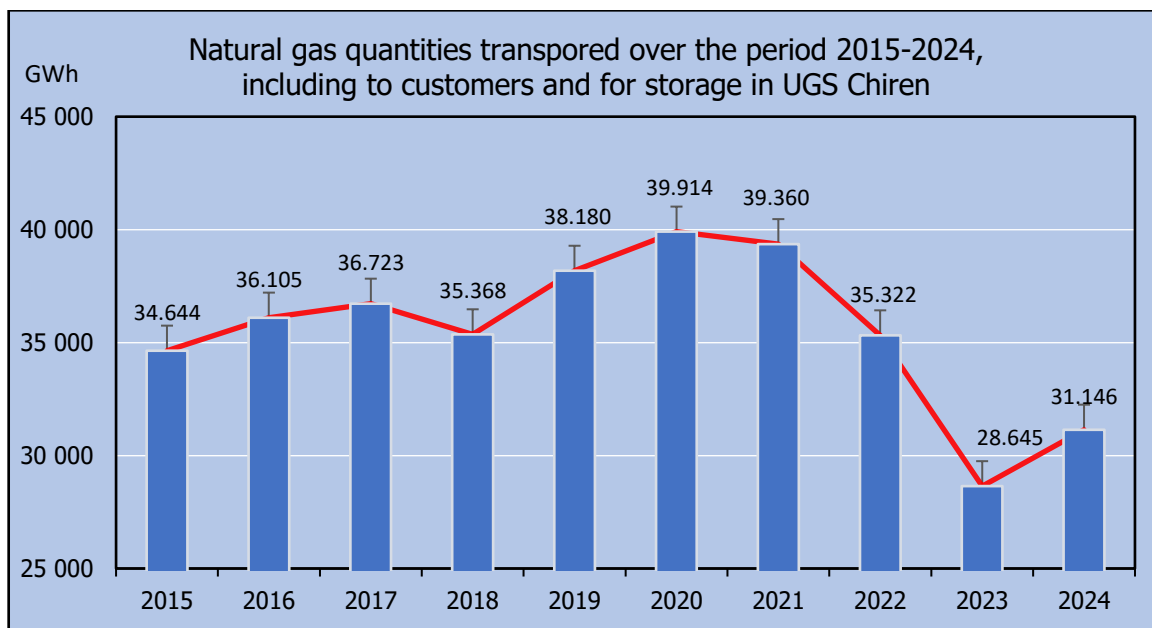
1. NATURAL GAS TRANSPORT

In its capacity of a licensed gas transmission operator Bulgartransgaz EAD shall ensure:

- Uniform management and reliable operation of the gas transmission networks to secure natural gas transport in compliance with the requirements for service quality and reliability;
- Maintenance, rehabilitation and modernization of the sites and facilities of the gas transmission networks according to the national and European technical requirements, occupational safety rules and the conditions for environmental protection, while applying the good practices in these areas;
- Development of the gas transmission networks in line with the economic feasibility and the social and economic needs of our country;
- Access of clients to the gas transmission services under transparent and non-discriminatory conditions according to the requirements of the national and the Community legislation and the good European practice.

Natural gas transported to consumers in the country (including the volumes transported for injection in Chiren UGS) in 2024 is 31,146 GWh and has increased by 9% compared to the previous year.

The natural gas quantities transported in the last ten years (including the quantities transported for injection in Chiren UGS) are shown in the diagram:



The natural gas quantities indicated as delivered in the country from import and local production (27,851 GWh) and respectively the actually transported natural gas quantities (31,146 GWh) differ due to the fact that the transmission activity also includes:

1. Quantities transported for injection in Chiren UGS;
2. Difference between the injected and withdrawn quantities in Chiren UGS;
3. Technological losses, technological differences due to the accuracy of the metering devices, etc.

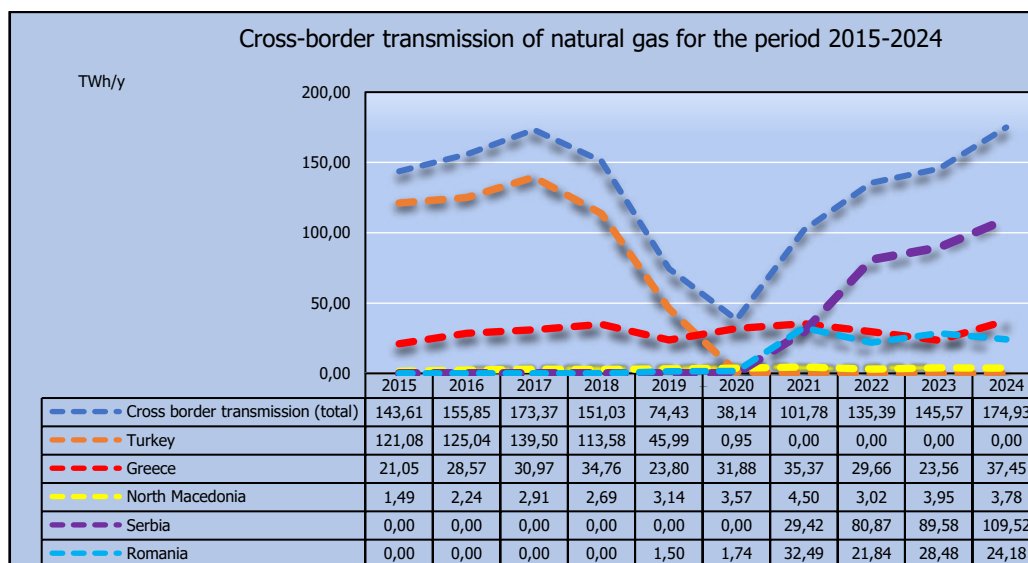
2. CROSS-BORDER NATURAL GAS TRANSPORT

Cross-border transported natural gas quantities in 2024 were 174, 925 TWh or 20% more than in 2023 (145,573 TWh). The transported quantities meet 100% of the consumption in the Republic of North Macedonia and significant part of the consumption in Greece and Serbia.

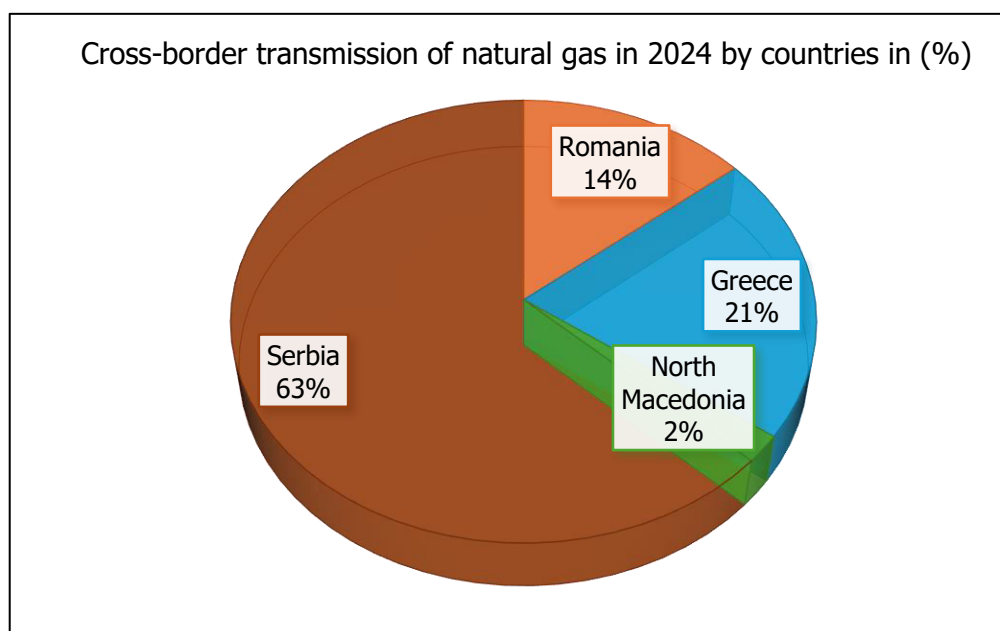
It is expected that in the coming years, with implementation of the new interconnection projects, increased technical transmission capacity and other priority projects in the region, natural gas volumes transported to increase and exceed the previous levels.

Additional growth in the cross-border transmission in the coming years is also expected in connection with the implementation of the strategic projects under the Vertical Corridor initiative, as a result of the demand in the EU for supplies from alternative sources of pipeline and LNG.

Cross-border transmission through the territory of Bulgaria for the period 2015-2024 is shown in the diagram below:



The percentage distribution of cross-border transport in 2024 by countries is:



3. NATURAL GAS STORAGE

Pursuant to Licence No. Л--214-10/29.11.2006, issued by EWRC, Bulgartransgaz EAD provides natural gas storage services by using its own underground gas storage (UGS) Chiren near the village of Chiren, Vratsa Municipality. The gas storage has 24 exploitation wells, a compressor station with approximately 31 MW total installed capacity (including the new compressors according to the gas storage expansion project) and auxiliary technological facilities necessary for securing the natural gas storage. Currently, when filled in at a maximum, Chiren UGS is able to cover about 25-30% of the daily needs during the cold winter months. The injected and withdrawn natural gas quantities depend on the market conditions and the optimal technical capabilities of Chiren UGS in compliance with the rules for safe operation. Bulgartransgaz EAD and the natural gas companies who have clients with irregular consumption are obliged to maintain a strategic reserve related to the security of supplies and

the seasonal fluctuation coverage.

Chiren UGS is a major instrument in covering seasonal fluctuation in the natural gas consumption and supply in the country and ensuring the security of supply.

The project for the expansion of the gas storage that is underway will increase its strategic role in developing the competition and increasing the benefits for natural gas consumers in the conditions of an integrated and interconnected regional gas market.

The projects aimed at increasing the transmission capacities with the neighbouring countries, together with the LNG terminal in Alexandroupolis, will enhance the market integration in the region and represent a prerequisite for Chiren UGS to play an increasingly important role in securing additional flexibility of the gas transmission systems at regional level.

In 2023, 1,211 GWh of natural gas were injected and 1,131 GWh were withdrawn, and in 2024, 3,295 GWh of natural gas were injected and 3,825 GWh were withdrawn.

Information on natural gas injection and withdrawal by months is shown in the table below:

Natural gas quantities withdrawn and injected in 2023 and 2024								
Month	Withdrawal				Injection			
	2023		2024		2023		2024	
	GWh	thousand cubic meters	GWh	thousand cubic meters	GWh	thousand cubic meters	GWh	thousand cubic meters
January	11,915	1,098	853,685	79,533	0	0	0.000	0
February	264,347	24,477	687,181	64,283	0	0	0.000	0
March	0,000	0	709,431	66,270	0	0	0,000	0
April	0,000	0	2,549	239	30,588	2,827	0,000	0
May	0,000	0	0,000	0	450,605	41,917	812,704	76,025
June	0,000	0	0,000	0	120,897	11,215	784,134	72,404
July	0,000	0	0.000	0	9,547	880	681,104	62,833
August	0,000	0	0.000	0	359,259	32,077	301,929	27,828
September	0,000	0	0.000	0	153,343	14,036	353,728	32,874
October	0,000	0	0.000	0	86,762	7,956	361,564	33,618
November	372,356	34,177	644.914	59,742	0,000	0	0	0
December	482,680	44,323	927,681	86,256	0	0	0	0
Total:	1,131	104,075	3,825	356,323	1,211	110,907	3,295	305,581

SCENARIOS FOR CAPACITY DEMAND AND SOURCES

TO COVER THE DEMAND IN THE COUNTRY



Metering lines in GMS

1. NATURAL GAS DEMAND

The demand scenario has been developed taking into account the relationship between the historical gas consumption in the country and the main macroeconomic indicators, comparative analysis of the gas markets in the EU and Bulgaria and the expected increase in the consumption resulting from the connection of new users and expansion of the production capacities.

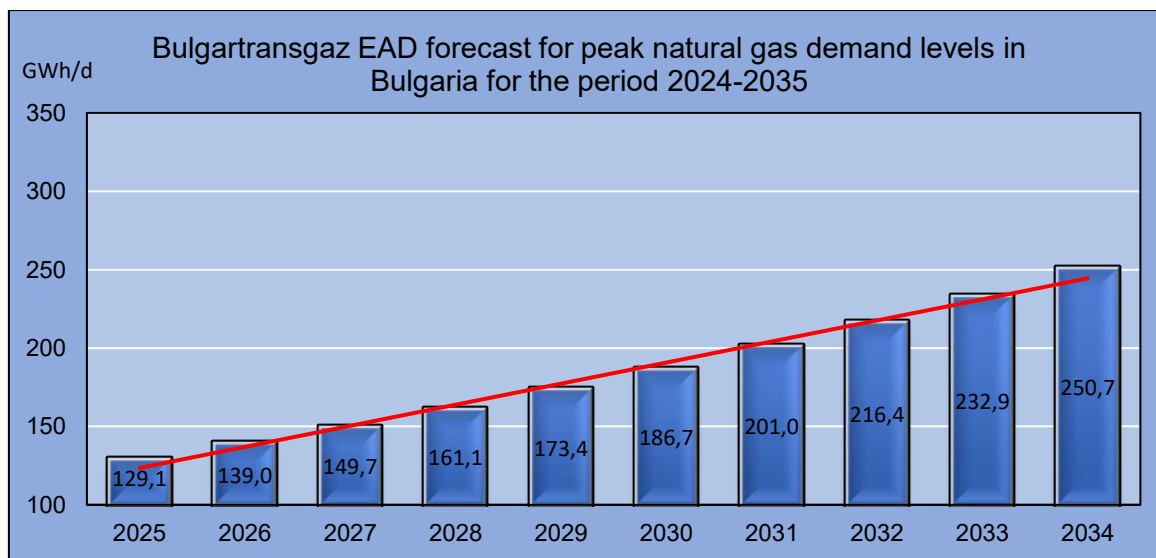
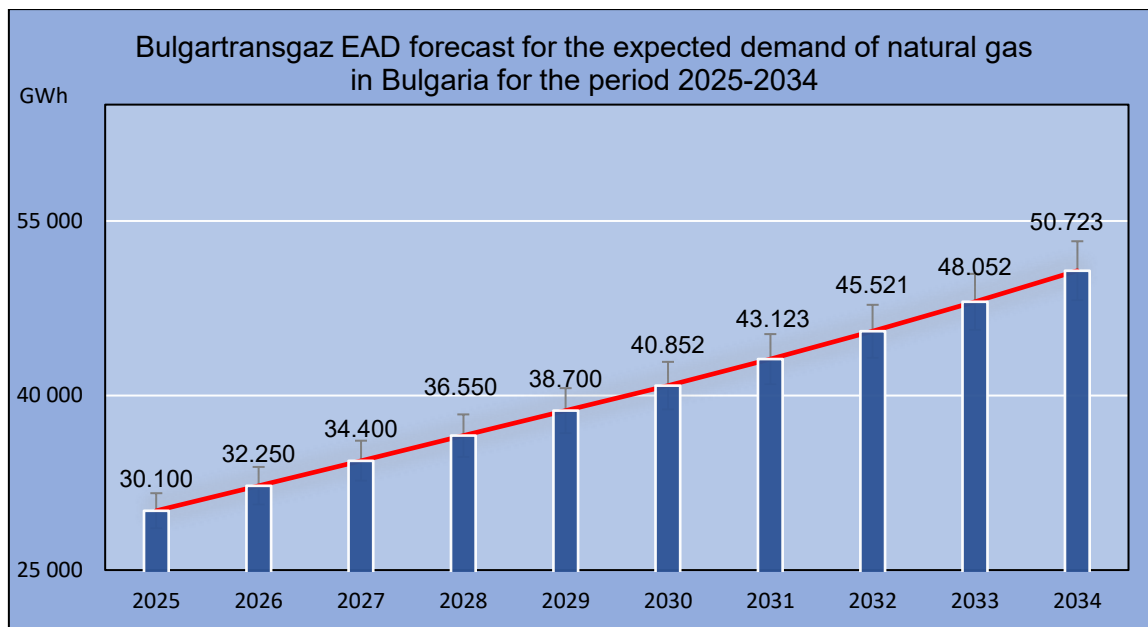
The relationship between the final and primary energy consumption (FEC and PEC) and the GDP growth for past periods have been analysed as well¹.

The main assumptions made based on an analysis of the past ten-year period and a comparative analysis of the EU gas market are as follows:

- Sustainable economic growth;
- Economy recovery after the COVID-19 pandemic;
- Increasing the natural gas share in PEC and FEC in the countries from the region in connection with increasing the level of gasification and reducing the use of coal;
- Increase of the natural gas supply from alternative sources to Bulgaria and the region.

¹ National Statistical Institute, www.nsi.bg; Eurostat, www.epp.eurostat.ec.europa.eu

Forecast on natural gas consumption in Bulgaria and expected peak daily demand levels during the winter months are shown in the diagrams:

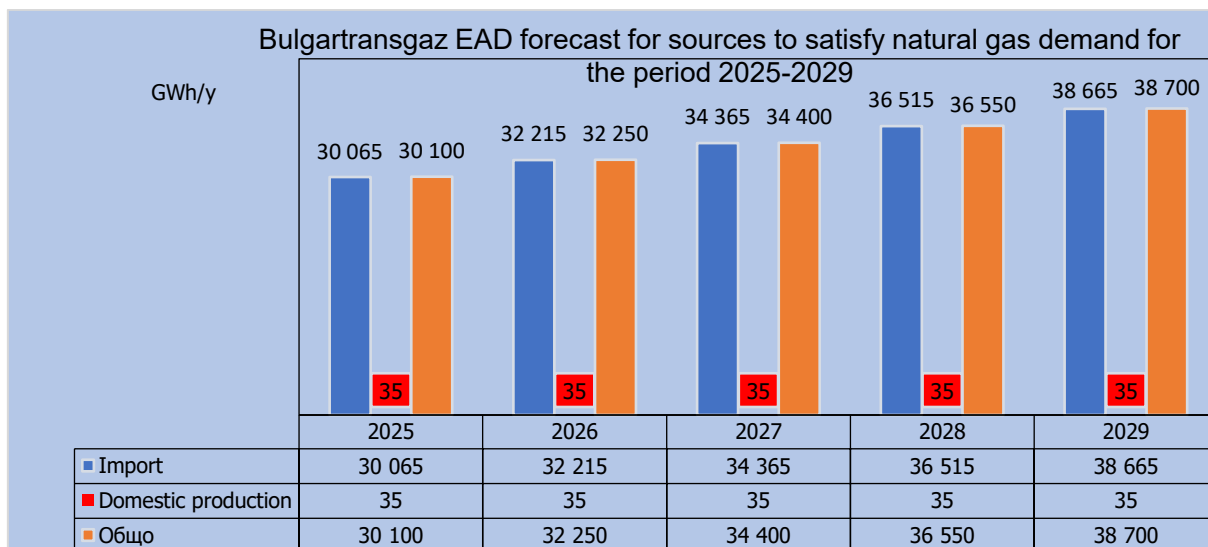


2. SOURCES TO MEET THE DOMESTIC DEMAND

In 2024 the need of natural gas for domestic consumption have been ensured, as follows:

- Import - 27,816 GWh (99.87%);
- Local production – 35 GWh (0.13%).

The forecast on the sources meeting the natural gas demand in the country for the period 2025-2029 is shown in the diagram below:



2.1 Import

The natural gas from imports includes gas new sources, coming from diversified routes and suppliers resulting from the implementation of the new gas projects and fields being developed. There is a trend towards diversification of gas supplies to neighbouring countries.

Main natural gas sources for the countries in the region within the considered period are:

- Increasing natural gas volumes from sources in the Southern Gas Corridor - the Caspian region, the Middle East and the Eastern Mediterranean;
- Increasing LNG quantities from various sources through the LNG terminals in Greece and Türkiye, the plans for capacity increase of the existing terminals, as well as construction of new ones;
- Natural gas from hubs in Western and Central Europe;
- Decreasing quantities of Russian natural gas;
- Production in the countries from the region.

2.2. Local Production

In 2025, local production is expected to remain insignificant. Considering the permits issued for oil and gas exploration, domestic production can be expected to increase in the coming years in the event of new gas discoveries offshore the Black Sea.

3. FORECAST OF DEMAND FOR NATURAL GAS TRANSPORT SERVICES THROUGH BULGARTRANGAZ EAD INFRASTRUCTURE

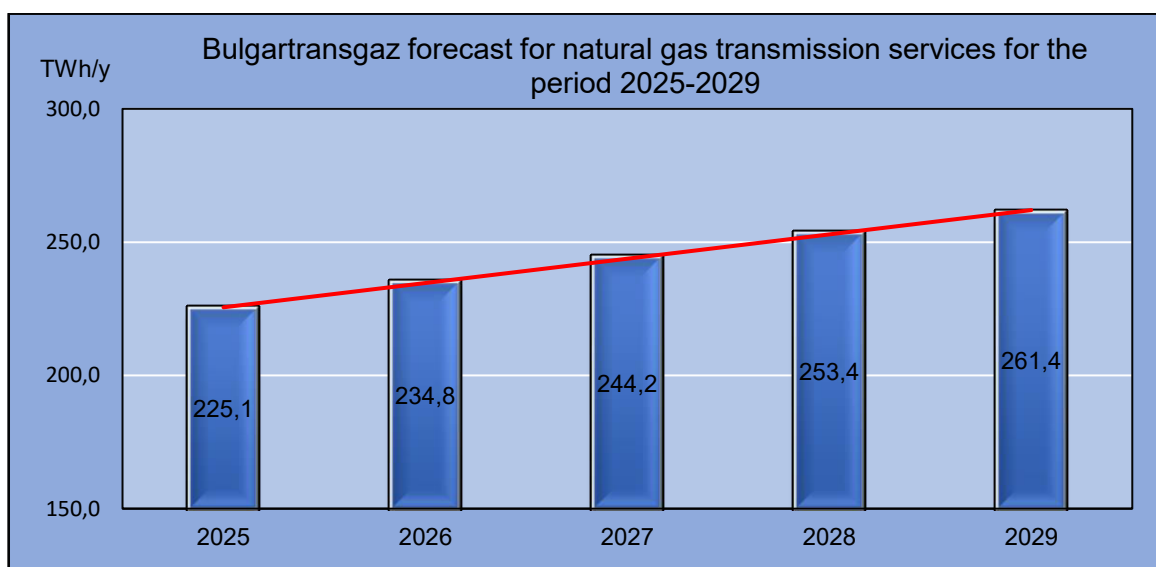
Bulgartransgaz EAD expects the demand for natural gas transport services to increase in the coming years in connection with:

- the development and establishment of a liquid regional gas market;
- ensuring natural gas transport capacities at the existing interconnections;
- utilization of the free capacity of the gas transmission system operated by the company, resulting from increased supply of liquefied natural gas through the terminals in the

region;

- the accelerated diversification of natural gas sources in the region of South Eastern Europe;
- the realisation of projects for new LNG terminals in the region;
- replacing Russian natural gas supplies to Moldova and the Central European region;
- phased increase in the capacity of Chiren UGS, starting from 2025;
- increase in natural gas consumption in the country, including as a result of the development of new gas-fired power generation capacities.

The forecast for the transportation services of natural gas over the period 2025 - 2029 to exit points of the gas transmission system, including interconnection points, is shown in the following chart:



SECURITY OF SUPPLY



GMS Strandzha

The calculation of the N-1 standard was prepared for the period 2025-2029 according to Article 5 of Regulation (EU) No. 2017/1938 concerning measures to safeguard security of gas supply and repealing Regulation (EU) No.994/2010.

The N – 1 formula describes the ability of the technical capacity of the gas infrastructure to satisfy total gas demand in the calculated area in the event of disruption of the single largest gas infrastructure during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years.

In the event of a disruption of the single largest gas infrastructure, the capacity of the remaining infrastructure should be able to supply the necessary gas quantities to satisfy the total gas demand in the area under calculation, i.e. N-1>100%.

The infrastructure standard implementation formula used for this TYNDP is as follows:

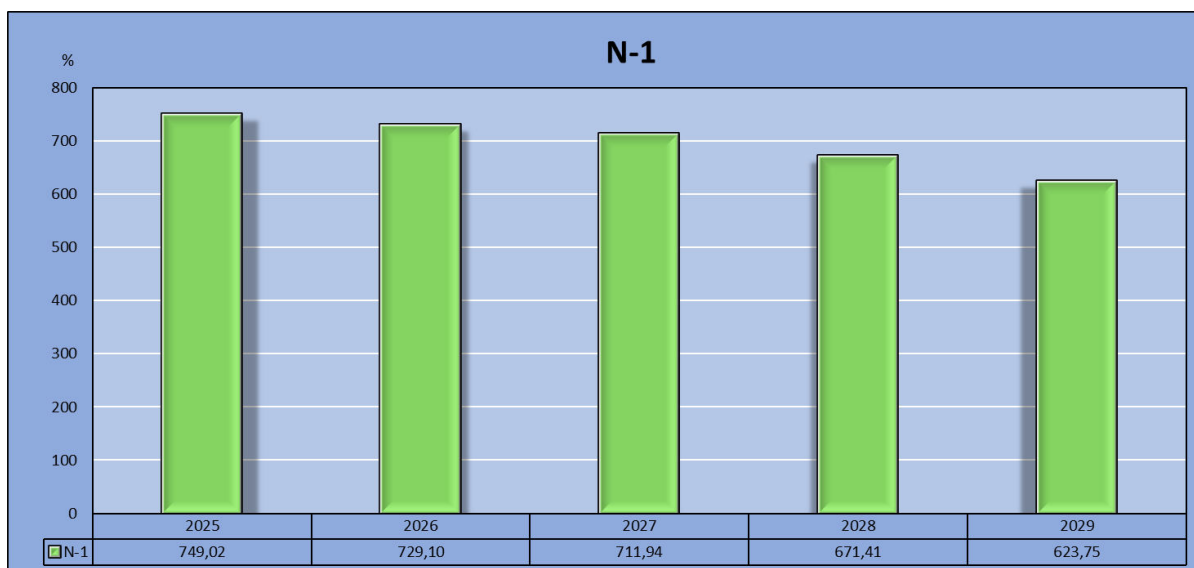
$$N - 1 [\%] = \frac{EP_m + P_m + S_m + LNG_m - I_m}{D_{max}} \times 100$$

where:

EP₁	Technical capacity of IP Strandzha 2/Malkoclar, mcm/d
EP₂	Technical capacity of GMS Negru Voda 1/Kardam, mcm/d
EP₃	Technical capacity of the Interconnector Bulgaria-Serbia, mcm/d
EP₄	Technical capacity of IP Kulata/Sidirokastro, mcm/d
EP₅	Technical capacity of IP Ruse/Giurgiu (IBR), mcm/d
EP₆	Technical capacity of IP Stara Zagora (IGB), mcm/d
EP₇	Technical capacity of IP Kireevo/Zaycar, mcm/d
EP₈	Technical capacity of IP Strandzha/Malkoclar, mcm/d
LNG_m	Maximum technical capacity of the LNG facilities
S_{max}	Withdrawal from Chiren UGS – the maximum possible
P_{max}	National gas production – the maximal possible production
D_{max}	National consumption – peak consumption
I_{max}=EP₁	The single largest gas infrastructure - IP Strandzha 2/Malkoclar, mcm/d

The results of the N-1 formula for the next five years are as follows (capacity data in the formula N-1 are expressed in mcm/d in line with the Regulation):

Година	P _{max}	S _{max}	EP ₂	EP ₃	EP ₄	EP ₅	EP ₆	EP ₇	EP ₈	D _{max}	LNG _{max}	Ep1=I _{max}	N-1
	mcm/d												%
2025	0,01	4,00	20,27	0,72	6,12	4,20	11,26	32,00	11,00	11,96	0,00	54,60	749,02
2026	0,01	5,00	20,27	0,72	9,37	4,20	11,26	32,00	11,00	12,87	0,00	54,60	729,10
2027	0,01	6,50	20,27	0,72	9,37	4,20	14,60	32,00	11,00	13,86	0,00	54,60	711,94
2028	0,01	8,00	20,27	0,72	9,37	4,20	14,60	32,00	11,00	14,92	0,00	54,60	671,41
2029	0,01	8,00	20,27	0,72	9,37	4,20	14,60	32,00	11,00	16,06	0,00	54,60	623,75



The calculations made by the formula N-1 for the infrastructure standard show that in case of disruption of the single largest gas infrastructure, the capacity of the other existing infrastructure will be able to ensure the necessary gas quantities to satisfy the overall gas demand on the territory of the Republic of Bulgaria for one day of exceptionally high natural gas demand.

Over the past years, Bulgartransgaz EAD realised a significant progress in ensuring the interconnectivity with the gas transmission systems of neighbouring countries, enhancing the transmission capacities and providing the possibility for gas supply to the country through various routes. The company relies on alternative natural gas supply routes, enabling, independently of each other, to fully satisfy natural gas demand in the country.

2025-2034 GAS INFRASTRUCTURE DEVELOPMENT PROJECTS



Construction of a pipeline network part of a high pressure gas pipeline

Bulgartransgaz EAD ensures security, reliability and free and equal access to the gas infrastructure. This is a prerequisite for the development and liberalization of the domestic gas market and the integration of the gas transmission system with the regional and the European one in order to create a single, competitive, pan-European gas market.

The supply and demand analysis, the risk assessment and the obligations of the combined gas operator to the public determine the necessary investments planned to be made in the period 2025-2034.

The investments provided for the period 2025-2034 will contribute to achieving the following key objectives:

- 1. Increase and guarantee of the technical security, safety and reliability of the gas infrastructure and compliance with the requirements for environmental protection** to satisfy the expected increased gas demand in the country and the region by:
 - Investments for reconstruction, rehabilitations and overhauls of the transmission networks including investments in the existing compressor stations, existing pipeline network infrastructure and existing gas regulation and metering stations, and in Chiren UGS;
 - Investments for construction of new facilities to the existing infrastructure necessary to enhance the efficiency of operation;
 - Investments in ancillary infrastructure, including the fibre optic network.
- 2. Providing opportunity for the development of competitive market and diversification** of the gas supply sources and routes, resulting in greater energy

independence by means of:

- Development of the connectivity allowing the access to the Southern Gas Corridor and liquefied gas terminals in the region to ensure diversification of natural gas supply sources and routes for Bulgaria, the countries of the region and Europe;
- Connection of new gas production companies in the country to the gas transmission network;
- Management systems digitalisation;

3. Ensuring the security of gas supplies to the country by means of:

- Investments in the construction of interconnections to connect the gas transmission networks located outside the territory of the country.
- Investments for expansion of the underground gas storage, both regarding the withdrawal and the injection facilities, and the capabilities for storage of larger amounts of natural gas.

4. Access of new customers to natural gas, which will contribute to improvement of the environmental, quality of life, energy efficiency and savings from cheaper fuel.

This chapter of the TYNDP constitutes structured information about the basic infrastructure planned for construction, expansion, reconstruction and modernization during the next ten years (2025-2034).

Considering the long-term period of investment planning - a ten-year period as well the inclusion in the TYNDP of the projects, for which at present no final investment decision is made and projects whose development is related to the implementation of other international projects in the gas sector, for the purpose of greater clarity the Network Development Plan has been structured into 3 main groups, defining the particular sites, timetable for their implementation and expected amount of the investments for this period:

- Investments for which decision for implementation in the period 2025 - 2027 has already been taken - Projects for the development of the gas transmission and storage infrastructure with investment decision already taken - Table 1;
- Investments whose implementation depends on the development of international projects implemented on the territory of the country - investments for the development of the gas transmission and storage infrastructure depending on the development of international projects and third parties projects in the period 2025-2034 – Table 2;
- Projects for the development of the gas and hydrogen transport and storage infrastructure in the period 2025 - 2034 for which no investment decision has been taken but there are investment intentions for their implementation during the 10-year period - Table 3;

Additionally, item 5 of this Section provides a more detailed description of the projects of key significance to the process of liberalization, diversification of the natural gas supply sources and routes, development of the gas network in the region and contribution to the national economy.

1. NATURAL GAS TRANSMISSION AND STORAGE INFRASTRUCTURE DEVELOPMENT PROJECTS IN THE PERIOD 2025 - 2027 FOR WHICH INVESTMENT DECISION HAS BEEN TAKEN

Investments for the more significant projects of the network on which a decision has been taken and which are scheduled for implementation in the period 2025 - 2027, are presented in consolidated form in Table 1. The implementation of some of the projects has commenced before 2025 or is planned to end beyond 2027. For such projects only the estimated value of the investments during that period of the planned funds is indicated in the table. The funds

specified represent the funding that shall be ensured by Bulgartransgaz EAD.

Table No. 1

Natural gas transmission and storage infrastructure development projects in the period 2025 - 2027 by consolidated projects	Period of the planned funds	Estimated amount of investment in thousand BGN (w/o VAT)
I. 2025-2027 RECONSTRUCTIONS, REHABILITATIONS AND OVERHAULS		
1. Investments in compressor stations:		
Reconstruction and rehabilitation at CS Polski Senovets and CS Valchi dol - Repairs of the building and construction of new fire fighting ring and water supply pipe on-site	2025-2027	6,610
Replacement of the outdoor switchgear 110 kV of CS Polski senovets and CS Valchi dol	2026/2027	15,500
2. Investments in existing AGRSs and GRSs		
Reconstruction and modernization of AGRS and GRS: AGRS Samokov – new external power supply, AGRS Kubrat - new external power supply, GRS Strashimirovo – new external power supply, GRS Shumen - construction of a metal fence; AGRS Pernik	2025-2026	375
3. License No. Л-214-06 of 29 November 2006.		
Replacement of a section LV Kalugerovo - LV Vrachesh; Replacement of a section LV Gorni Bogrov - PF Novi Iskar; replacement of a section PF Lom - Cherkovna to CS Polski Senovets and construction of a new PF Polski Senovets; replacement of a section of the gas transmission network from LV-4 to the old GRS at Conn-2; Displacement of sections of TGP 1 and main GP to increase the class of the gas pipelines and construction of a new valve group Dn 1200	2025-2027	52,149
4. License No. Л-214-09 of 29 November 2006.		
Reconstruction of protective equipment; restoration of the ground cover of gas pipelines for Greece in the lands of Dragodan village, municipality of Boboshevo, reconstruction of pigging facilities: PF Odrintsi and PF Lozenets of TG-2 Dn 1200; Obligation to work in reverse flow mode at CS Ihtiman; HDD drilling of a gas pipeline to Greece as it crosses Struma river at firefighting valve (FV) 1203-1205 (Topolnitsa village) and at FV+812 (Slivnitsa village); PF Gyueshevo – new; PF Piperevo – reconstruction; Construction of a concrete threshold at the crossing of the transit gas pipeline to Greece and Macedonia and the main gas pipeline crossing Stryama; Construction of a concrete	2025-2026	5,841

Natural gas transmission and storage infrastructure development projects in the period 2025 - 2027 by consolidated projects	Period of the planned funds	Estimated amount of investment in thousand BGN (w/o VAT)
threshold at the crossing of the transit gas pipeline to Greece and Macedonia and the main gas pipeline crossing Luda Yana; Protective equipment at Topolnitsa river close to Kalugerovo village, region Pazardjik at crossing over the transit and main pipelines		
Repair of gas pipeline DN 1000 to the Hellenic Republic and the Republic of North Macedonia in the section between LV Yavorovo and LV Gorno Beleva; Repair by means of replacement of a section of transit gas pipeline DN 1000 to the Hellenic Republic and the Republic of North from Valve "B" at CS Ihtiman to the village of Venkovets; Replacement of a section DN 1000 of the Transit gas pipeline from CS Lozenets to the border with the Republic of Türkiye	2025-2026	79,554
II. INVESTMENTS IN CONSTRUCTION OF NEW FACILITIES TO THE EXISTING INFRASTRUCTURE NECESSARY TO INCREASE THE EFFICIENCY OF OPERATION		
1. Gas transmission infrastructure		
Construction of cleaning facilities (launch and receive chambers) for gas pipeline branches Dimitrovgrad, Sevlievo, Razgrad and Plovdiv	2025 – 2026	1,206
2. Natural gas storage		
Well for the reinjection of incidentally extracted formation water and reconstruction of a water supply system for the discharge from Chiren UGS	2025-2026	16,000
3. Investments in auxiliary networks		
Optic cable lines from Bulgartransgaz EAD Headquarters: to PF Novi Iskar, PF Novi Iskar to Kremikovtzi, ADRS Razgrad 1 - Gorotsvet, Bulgartransgaz EAD headquarters to GRS Pernik	2026-2027	4,491
New information system for the collection, archive and visualization of technological information from Bulgartransgaz EAD gas transmission network	2025-2026	15,870
III. ACCESS OF NEW MUNICIPALITIES AND NEW END USERS TO NATURAL GAS		
1. Investments for construction of new gas metering and gas regulation stations		
Purchase of existing assets for the gas market development	2025-2027	300

2. NATURAL GAS TRANSMISSION AND STORAGE DEVELOPMENT INVESTMENTS OVER THE PERIOD 2025 – 2034 UNDER PROJECTS WITH AN INTERNATIONAL DIMENSION

The investments that depend on the development of projects of international importance, carried out on the territory of Bulgaria, are shown in Table 2.

Table No. 2

Natural gas transmission and storage infrastructure development projects in the period 2025 - 2034 by consolidated projects	Period of the planned funds	Estimated amount of investment in thousand BGN (w/o VAT)
I. PROJECTS PROVIDING THE OPPORTUNITY TO DIVERSIFY THE GAS SUPPLY SOURCES AND ROUTES		
1. Natural gas storage		
Expansion of Chiren UGS capacity – above – ground part ² and wells	2025 - 2027	272,344
2. Natural gas transmission infrastructure		
Pipeline network infrastructure within the framework of the projects to increase the transmission capacity under the Vertical Corridor initiative, including:	2025-2026	424,786
2.1. Looping from Kulata to Kresna;		90, 883
2.2. Gas transmission pipeline Piperevo - Pernik;		77,848
2.3. Looping Rupcha - Vetrino;		244,184
2.4. Compressor station Kardam - reversal and expansion of the capacity of the control system.		11,871

The funds under item 1 represent the value of the remaining construction costs (for the above-ground part), author's supervision and construction supervision, and under concluded contracts and estimated values for the design and construction costs (for the wells), compensation, easements, archaeology and fees. The total estimated value of the project for the Expansion of Chiren UGS capacity is approximately EUR 308 million; roughly EUR 78 million are granted from the Connecting Europe Facility.

3. NATURAL GAS TRANSMISSION AND STORAGE INFRASTRUCTURE DEVELOPMENT PROJECTS IN THE PERIOD 2025 - 2034 ON WHICH FINAL INVESTMENT DECISION IS TO BE TAKEN

In order to determine the subsequent realisation of the projects listed below, preliminary studies will be carried out on the appropriateness and method of implementation and funding, principle technical solutions, scope, location, etc.

Table No. 3

² Project of common interest in the meaning of Regulation (EU) 347/2013, included under number 6.20.2 in the fifth list of Projects of Common Interest (PCI).

Natural gas transmission infrastructure development projects in the period 2025 - 2034 for which no investment decision has been taken	Period of the planned funds	Estimated amount of investment in thousand BGN (w/o VAT)
1. License No. Л-214-09 of 29 November 2006.		
1.1. Construction of a reverse flow connection line at CS Provadia	2025-2027	1,550
2. License No. Л-214-06 of 29 November 2006.		
2.1. Actions on construction of cleaning facilities /launch and receive chambers/ of gas pipeline branches for Pleven and Pazardzhik, Shumen, Novi pazar and Ispereh	2025-2027	9,490
2.2. Gas transmission pipeline with AGRS to Bansko and Razlog	2026-2029	43,645
2.3. High-pressure gas transmission infrastructure to supply consumers in Maritsa East Basin	2025-2027	211,090
2.4. AGRS Dermantsi – for gas pipeline branch Lukovit, gas pipeline branch with AGRS to Hisarya and the town of Sopot	2025	90
3. Total for distribution		
3.1. Project on increasing the technical capacity for natural gas transmission in direction from Greece to Bulgaria at IP Kulata/Sidirokastro - II stage	2027-2029	361,236
4. Hydrogen projects		
4.1. Retrofitting of the existing gas transmission infrastructure for operation with up to 10% hydrogen	2025-2028	857,603
4.2. Hydrogen transmission infrastructure in Bulgaria, Phase 1 (250 km pipeline and 2 CS)	2025-2029	1,682,014
4.3. Hydrogen transmission infrastructure in Bulgaria, Phase 2 (330 km pipeline and 3 CSs)	2026-2029	2 253 116

The funds under positions 2.3., 3 and 4 of Table 3 represent an estimate of the investment.

4. 2025 – 2034 INVESTMENT PROGRAM

This Section presents Bulgartransgaz EAD Investment Program for the period 2025-2034 divided into the following activities:

- **Investments** - actions aimed at the expansion, reconstruction, modernization and overhauls, grouped into three main sections:
 - Construction of new facilities;
 - Reconstruction, rehabilitation and overhauls of long-term tangible assets;
 - Delivery of machinery and equipment.

4.1. Three-year Investment Programme (2025 - 2027) including investment activities on which final investment decision has been taken

Table 4

in BGN thousand, VAT excluded

Programme/Section	Total 2025	Total 2026	Total 2027
TOTAL Annual Programme for Investments:	471,416	360,169	98,404
<u>SECTION I.1 - Construction of new sites</u>	<u>428,082</u>	<u>224,885</u>	<u>73,049</u>
<i>Gas transmission network</i>	<i>319,725</i>	<i>95,868</i>	<i>4,351</i>
Pipeline network	319,526	94,716	0
CSs, administrative and operating regions	3	789	0
Communication and information systems	0	250	4,241
AGRS and GMS	196	113	110
<i>Natural gas storage</i>	<i>98,549</i>	<i>121,097</i>	<i>68,698</i>
Wells and gas gatherings	2,708	13,292	0
Expansion of Chiren UGS capacity	95,841	107,804	68,698
<i>Total for allocation by types of activities</i>	<i>9,808</i>	<i>7,920</i>	<i>0</i>
CSs, administrative and operating regions	490	1,368	0
Chief Dispatching Division	9,318	6,552	0
<u>SECTION I.2 - Reconstruction, rehabilitation and overhauls of long-term tangible assets</u>	<u>30,895</u>	<u>126,819</u>	<u>17,855</u>
<i>Gas transmission network</i>	<i>18,849</i>	<i>119,261</i>	<i>17,545</i>
Pipeline network	12,729	107,855	45
CSs, administrative and operating regions	5,830	11,348	17,500
AGRS and GMS	290	57	0
<i>Total for allocation by types of activities</i>	<i>12,046</i>	<i>7,559</i>	<i>310</i>
Pipeline network	12,034	5,775	0
CSs, administrative and operating regions	0	1,784	310
Communication and information systems	12	0	0
<u>SECTION I.3 - Supply of machinery and equipment</u>	<u>12,439</u>	<u>8,465</u>	<u>7,500</u>

4.2. 2028-2034 Investment programme, including mandatory investment activities ensuring capacity capabilities of the networks

Table 5

in BGN thousand, VAT excluded

Programme/Section	Total	Total	Total	Total	Total	Total	Total
	2028	2029	2030	2031	2032	2033	2034
TOTAL Annual Programme for Investments:	33,596	33,041	33,793	35,608	36,488	37,937	39,459
SECTION I.1 - Construction of new sites	9,133	8,927	9,373	9,842	10,334	10,850	11,393

SECTION I.2 - Reconstruction, rehabilitation and overhauls of long-term tangible assets	16,962	16,114	16,920	17,766	18,654	19,587	20,566
SECTION I.3 - Supply of machinery and equipment	7,500	8,000	7,500	8,000	7,500	7,500	7,500

5. DESCRIPTION OF KEY PROJECTS

The realisation of the below projects for the development of the infrastructure, Bulgaria will keep its strategic position on the gas map of Europe and position itself as one of the gas hub in South East Europe. Therefore, the company's plans are to implement them in the short term and allow significant quantities of natural gas from alternative sources to be transported through the gas transmission infrastructure of Bulgartrngaz EAD both to Bulgaria, and the countries from the region.

The following projects will be key for the market integration, diversification and enabling the transport of additional natural gas quantities to and through Bulgaria:

- Expansion of Chiren UGS;
- Infrastructure development projects for the increase of the transmission capacities from Greece to Bulgaria and from Bulgaria to Romania in the context of the verticla Gas Corridor;
- The project for high-pressure gas transmission infrastructure to supply consumers in the Maritsa East Basin.

Along with the efforts that Bulgartrngaz EAD makes to achieve the pan-European goals for improving the security of supply, diversification of natural gas supply sources and routes, the Company actively participates in the current processes for adapting the energy sector in accordance with the plans to achieve of energy decarbonisation and climate neutrality according to the European energy policy.

The next year will see the natural gas keeping its key role in the process achieving the decarbonisation objectives. The available gas transmission infrastructure provides an opportunity for the successful and accelerated introduction of hydrogen into the energy mix, and the plans for the construction of a new hydrogen transmission infrastructure will guarantee the large-scale development of the energy sector in the country. This concept is embedded in defining the projects that will contribute to the transition to low carbon energy. Solutions for preparation of the existing gas transmission network for compatibility with the inclusion of hydrogen and other low-carbon gases in the network, as well as for completely new routes for green hydrogen transmission are being considered that may potentially become the future hydrogen corridor in the region of South East Europe.

Bulgartrngaz EAD is developing the following hydrogen projects:

- Hydrogen transmission infrastructure in Bulgaria (in 2 phases);
- Smartening of the existing Bulgarian gas transmission system and the associated

network assets to effectively integrate low carbon and renewable gases.

The implementation of the projects accounts for the development of strategies and policies regarding the hydrogen infrastructure at regional and pan-European level is taken into account. Detailed information is available in 5.2 below.

5.1. Key projects for the development of the gas infrastructure

The gas infrastructure development concept is based on several key factors:

- New natural gas sources;
- Optimal use of the existing gas transmission networks and Chiren UGS;
- - Modernization and expansion of the existing infrastructure;
- Building new, expansion of existing interconnection with neighbouring countries and network development to new exit points in the country;
- Optimal trade environment through a liquid gas exchange.

A number of projects in the field of transport and storage of natural gas are under implementation, which are important for the development of the natural gas market in the country and the region.

In October 2024 the **Alexandroupolis Independent Natural Gas System (INGS)** was commissioned in commercial operation and Bulgartransgaz EAD has a 20% shareholding there. The project is of strategic importance because it provides a new gateway to the Southeastern and Central European region for additional quantities of natural gas for the gas markets in the region, offering access to reliable sources such as the USA, Qatar, Egypt and others. The terminal includes an entry point for the **Vertical Gas Corridor initiative** as well. The existing and planned gas pipelines in the region will provide access to natural gas from the terminal for consumers in Bulgaria, as well as in the Republic of North Macedonia, Serbia, Romania, Hungary, Moldova and Ukraine. The terminal provides them with the opportunity to take advantage of the dynamically developing LNG market and the benefits it offers – flexibility, competitiveness and security of supply, as well as access to new gas suppliers.

Commissioning of the **Alexandroupolis terminal** strengthens the role of LNG in the region's sustainable natural gas supply and improves the access to the global LNG market.

All possibilities for Bulgartransgaz EAD shareholding in a second LNG terminal in the region are studied.

Capacity expansion of Chiren Underground Gas Storage

Chiren UGS is mainly used to compensate the seasonal fluctuations in natural gas consumption in the country caused by the differences between the supplies and consumption by providing the necessary flexibility, and ensures emergency reserve.

Chiren UGS capacity expansion project has been determined to be a project of common interest for the EU. The objective is the capacity increase in stages of the only gas storage facility on the territory of Bulgaria in order to achieve larger volumes of gas stored - up to 1 bcm, including increased gas reservoir pressure and higher daily average withdrawal and injection rates up to 8-10 mcm/day.

The expansion of the capacity of the only gas storage in our country is among the priority energy projects in the region. Its implementation will contribute to guarantee energy security,

the security of supply, and increase competition on the gas market in Bulgaria and South East Europe. The project is in synergy with the existing and planned new LNG terminals in the region and the plans for expansion of the gas transmission infrastructure and will enable gas traders and consumers in the region to take full advantage of the dynamic development and competitive advantages provided by the liquefied natural gas market.

The project includes three main aspects: (1) design and construction of new surface equipment – a compressor station with its auxiliary facilities, (2) design and construction of underground equipment and (3) design and construction of a gas transmission pipeline connecting Chiren UGS to the existing gas transmission system of Bulgartransgaz EAD in the area of village to ensure the required connectivity.

The transmission gas pipeline was commissioned in November 2024, and the compressor station and its auxiliary equipment were commissioned in March 2025. This allows as of 1 May 2025 the capacity of Chiren UGS to be increased by 100 mcm up to a total of 650 mcm.

The storage capacity will continue to be gradually expanded in parallel with the drilling of the new wells. By the end of 2027 all of the required infrastructure is expected to be made available to reach the targeted parameters of the expansion.

The **Vertical Gas Corridor** is a strategic project for ensuring security of supply and diversification of natural gas supplies to Bulgaria and the countries of South-Eastern, Eastern and Central Europe.

The concept of the project is based on the maximum utilization of the possibilities of the existing gas transmission networks and gas systems along the corridor, including the Alexandroupolis terminal and making optimal investments of the participating parties in an additional infrastructure, which will allow the transport of the increasing quantities of LNG from the LNG terminals in Greece and Türkiye.

The increase of gas transmission capacities at the interconnection points of the gas transmission networks of Greece, Bulgaria, Romania, Hungary, Slovakia, Ukraine and Moldova is of key importance for boosting the energy security and market integration of the countries of South East, Eastern and Central Europe.

The strategic route of the Vertical Gas Corridor Initiative will ensure access to additional quantities of LNG for consumers. Concerning the projects that will be implemented on the territory of Bulgaria for the increase of the capacities from Greece to Bulgaria and from Bulgaria to Romania will ensure the technical possibility for the transport of the additional quantities of natural gas, including from the Southern Gas Corridor and liquefied natural gas from terminals in neighbouring countries with the maximum use of the possibilities of the existing infrastructure.

The projects that Bulgartransgaz EAD works on to increase the transmission capacities from Greece to Bulgaria and from Bulgaria to Romania are a key part of the overall vision of the Vertical Corridor, and their implementation and the infrastructure already available in the country are the basis for achieving the set objectives for diversification and improving the security of supply.

A project to increase the transmission capacity at Interconnection point Kulata/Sidirokastro in Greece-Bulgaria direction

The project includes the construction of infrastructure to increase the technical capacity for gas transmission in IP Kulata/Sidirokastro in the direction from Greece to Bulgaria with 35,4 GWh/d up to a total of 102 GWh/d.

Its implementation will provide access to additional quantities of pipeline gas and LNG from alternative sources, including the USA, Azerbaijan, Egypt and others, for Greece, Bulgaria and all countries in the region. As part of the key infrastructure of the Vertical Gas Corridor, the implementation of the project is a priority for Bulgaria and the region of Central, Eastern and South East Europe.

As a result of successful public procurements in June 2024, Bulgartransgaz EAD concluded the main contracts for the implementation of the following projects: Looping from Kulata to Kresna (48 km, DN700) and Transmission Gas Pipeline from Piperevo to Pernik (53 km, DN500). Activities related to spatial planning, design and obtaining the necessary permits, delivery of the necessary materials and equipment, preceding the construction of the planned infrastructure, are being carried out.

The planned date for commissioning the new infrastructure is in the first quarter of 2026. The indicative value of the investment amounts to EUR 122,5 million.

If there is the relevant commercial interest, Bulgartransgaz EAD is ready to launch activities on an expanded version of the project, including an additional 82 km of DN700 loop (Kresna - Piperevo), installation of an additional GTCU at Petrich compressor station with a capacity of 9 MW, replacement of 50 km of DN700 gas pipeline (Ihtiman - Gorni Bogrov) and reversal and reconstruction of connections and equipment at Ihtiman compressor station (without the need for new compressor capacity).

Upon the implementation of this additional investment, the total technical capacity in the direction from Greece to Bulgaria at IP Kulata/Sidirokastro could be increased by an additional 69 GWh/d to 171 GWh/d.

The indicative additional cost of the extended option is estimated at EUR 184.7 million, and the planned commissioning date is in 2029.

Project for the increase of the transmission capacity at Interconnection point Negru Voda 1/Kardam in Bulgaria-Romania direction

The project includes the construction of infrastructure to increase the technical capacity for gas transmission at IP Negru Voda 1/Kardam by 137.2 GWh/d to a total of 295 GWh/d in the Bulgaria-Romania direction.

Its implementation will contribute to a significant increase in natural gas quantities for Romania, as well as for the other countries along the Vertical Corridor route, including Ukraine and Moldova.

The project includes the construction of a looping from Rupcha to Vetrino representing a high pressure gas pipeline with a diameter of DN1200 and approximate length of 61 km and CS Kardam - reversal and expansion of the capacity of the control system (without the need for new compressor capacity) and expansion of the capacity of its control system.

In June and July 2024 Bulgartransgaz EAD signed the main contracts and activities are underway related to the spatial planning, design and grant of the required permits, supply of the required materials and equipment for the construction of the required infrastructure.

The planned date for the commissioning of the new infrastructure is in the first quarter of 2026. The indicative value of the investment amounts to EUR 191,4 million.

Bulgartransgaz EAD developed a concept as well for a project for a high-pressure gas transmission infrastructure to supply consumers in the Maritsa East Basin.

The project consists of a complex of activities to provide a new high-pressure gas transmission infrastructure with sufficient capacity to transport gas to thermal power plants and other potential consumers in the Maritsa East Coal Basin.

Its realisation will create the conditions for the modernization of the combustion installations of thermal power plants and other energy users, for introducing lower-emission fuels in the energy mix, and a significant reduction of greenhouse gas emissions from combustion processes. The implementation of the project will contribute to meeting the decarbonisation objectives of the energy sector, the transition to new low carbon technologies and increasing the energy security, namely the development of gas transmission infrastructure in the Maritsa East Basin.

This in turn will have a positive social impact as it will allow jobs to be held down in the region. The project is in line with the EU's climate and green transition goals and is being implemented in synergy with the vision set out in the roadmap for climate neutrality and decarbonisation of the Bulgarian economy.

Expansion of Chiren UGS capacity	
 Co-funded by the European Union	
Project identification in lists: Expansion of Chiren UGS capacity (PCI 6.20.2 in the Fifth list of Projects of Common Interest) CESEC priority project Chiren UGS was declared a site of national importance, according to Decision No. 755/21.09.2004 and a national site, according to Decision No. 709/14.10.2021 of the Council of Ministers. Gas pipeline connecting Chiren UGS with the existing gas transmission network of Bulgartransgaz EAD was declared a national site and a site of national importance, according to Decision No. 528/02.08.2023 of the Council of Ministers.	
Type of project: Underground gas storage	
Description of the project: Chiren UGS expansion - gradual increase in the active gas volume up to 1 bcm and increase in the injection and withdrawal capacity up to 8-10 mcm/d. Technical data: - Above-ground part: Compressor equipment with the auxiliary equipment, GMS, separation installations, heating and dehydration, etc. - Wells: 10 exploitation and 3 observation wells, gatherings, auxiliary activities, etc. - Gas pipeline connecting Chiren UGS to the existing gas transmission network of Bulgartransgaz EAD of ~41 km length and DN700.	
Expected amount of the investment: ~ EUR 308 million, VAT excluded.	Funding: 1. Bulgartransgaz EAD own funds; 2. Co-financing from the Connecting Europe Facility (CEF) in the amount of about EUR 78 million (Project 101069718 — 6.20.2-BG-W-M-21-Chiren-UGS-Expansion).
Estimated commissioning date:	Gradually, by April 2027
Project phase:	In progress
Current status of project implementation: Above-ground facilities: - Commissioned (in March 2025). Wells: - The gradual drilling and commissioning of the required new wells are pending. Gas pipeline: - The gas pipeline has been commissioned (in November 2024). As of 1 May 2025 Chiren UGS capacity has been expanded up to 650 mcm thanks to the new above-ground equipment and a gas pipeline connecting the storage facility to the gas transmission network.	
Expected benefits: Ensuring the security of supply; Increasing market integration; Stimulation of market competition; Promotion of gas trade in the region; Contribution to the implementation of the energy transition and reduction of emissions; Contribution to the introduction of gas from alternative sources, including LNG.	
Project website: https://www.bulgartransgaz.bg/chiren	

Project for the increase of the transmission capacity at Interconnection point Negru Voda/Kardam in Bulgaria-Romania direction

Project identification in lists:

Project TRA-N-1124, TYNDP2024 of ENTSOG

National site and site of national significance in accordance with Decision No. 133 of 23.02.2024 of the Council of Ministers

Type of project: High pressure gas pipeline and auxiliary facilities

Description of the Project: Increasing the technical capacity for natural gas transmission in direction from Bulgaria to Romania at Interconnection point IP Negru Voda/Kardam.

Technical data:

Looping from Rupcha to Vetrino of about 61 km approximate length, DN1200

Activities related to reversing compressor station Kardam (without the need for new compressors) and expansion of its control system capacity.

Increase in the transmission capacity from Bulgaria to Romania: 137.2 GWh/d (up to a total of 295 GWh/d).



Expected amount of the investment:

~ 191.4 million €

Estimated commissioning date:

The beginning of 2026

Project phase:

In progress

Current status of project implementation:

- A contract is signed and underway with a subject matter "Investment design, supply of the necessary materials and equipment, construction and commissioning of a construction site Looping from Rupcha to Vetrino" and contract "Investment design, supply of the necessary materials and equipment, construction and commissioning of a site: Compressor station Kardam - reversal and expansion of the capacity and the control system";
- With Decision 1-1/2025 on the environmental impact assessment of the MOEW, the realisation of the site Looping from Rupcha to Vetrino was approved;
- Detailed Spatial Plan - Parcelling Plan (DSP-PP was approved for the site Looping from Rupcha to Vetrino and a Detailed Design is underway; archaeological digs for the site are ongoing;
- A Detailed Design for the site is underway: Compressor station Kardam - Reversal and expansion of the capacity of its control system, to be coordinated with the control bodies.

Expected benefits:

A key part of the Vertical Gas Corridor infrastructure; a strategic route to provide access to additional LNG and gas from alternative sources for the region; improving the interconnection between Bulgaria and Romania.

A project to increase the transmission capacity at Interconnection point IP Kulata/Sidirokastro in Greece-Bulgaria direction

Project identification in lists:

Project TRA-N-1140, TYNDP2024 of ENTSG

National site and site of national significance in accordance with Decision No. 133 of 23.02.2024 of the Council of Ministers

Type of project: High pressure gas pipeline and auxiliary facilities

Description of the Project: Increasing the capacity for natural gas transmission in direction from Greece to Bulgaria at Interconnection point IP Kulata/Sidirokastro.

Technical data - baseline option:

Includes: Looping from Kulata to Kresna with an approximate length of 48 km, DN700 and a high pressure gas pipeline from Piperevo to Pernik with an approximate length of 53 km, DN 500.

Increase of the transmission capacity from Greece to Bulgaria: 137.2 GWh/d (up to a total of 102 GWh/d).

The project implementation will also enable the increase in the transmission capacity at IP Kyustendil/Zhidilovo from Bulgaria to North Macedonia by 5,383 GWh/d.

Technical data - extended option:

In addition to the base variant:

Looping from Kresna to Piperevo of 84 km approximate length, DN 700;

A high pressure gas pipeline from Ihtiman to G. Bogrov of 50 km approximate length, DN 700;

Installation of additional 9 MW GTCU at CS Petrich and reconstruction;

Reversing of CS Ihtiman

Increase of the transmission capacity from Greece to Bulgaria: 69,0 GWh/d (up to a total of 171 GWh/d).



Expected amount of the investment:

Baseline option: ~ 122.5 million €

Extended option: ~ 307.2 million €

Estimated commissioning date:

Baseline option: The beginning of 2026

Extended option: 2029

Project phase:

In progress

Current status of project implementation:

- Contracts with the following subject matter are in the process of being implemented: Spatial planning, investment design, supply of the necessary materials and equipment, construction and commissioning of sites Looping from Kulata to Kresna and Gas transmission pipeline from Piperevo to Pernik
- Site Looping from Kulata to Kresna: With Decision 11-П/2024 of the MOEW as assessment was made that there is no need of EIA; a Detailed Spatial Plan -Parcelling Plan was approved and easement rights were established crossing agricultural lands; Building permit was issued PC-28/17.04.2025 for the stage: Pipeline network for the site; archaeological excavations are underway;
- Site "Gas Transmission Pipeline from Piperevo to Pernik": With Decision 2-П/2025 of the MOEW MOCB as assessment was made that there is no need of EIA; currently the prepared Detailed Spatial Plan -Parcelling Plan is coordinated.

Expected benefits:

A key part of the Vertical Gas Corridor infrastructure; a strategic route to provide access to additional LNG and gas from alternative sources for Bulgaria and the region; improving the interconnection between Bulgaria and Greece.

Project for High-pressure gas transmission infrastructure to supply consumers in Maritsa East Basin

Project identification in lists:

Project TRA-N-1170, TYNDP2024 of ENTSOG

National site and site of national significance in accordance with Decision No. 133 of 23.02.2024 of the Council of Ministers

Type of project: High pressure gas pipeline and auxiliary facilities

Description of the Project: High-pressure gas transmission infrastructure and enough capacity to supply consumers in Maritsa East Basin.

Technical data:

New high-pressure gas pipelines of about 73 km approximate total length, a diameter DN 700 and DN 500 and their auxiliary technological facilities



Expected amount of the investment:

~ 107.9 million €

Estimated commissioning date:

2027

Project phases:

Pre-project activities

Current status of project implementation:

A conceptual route and technological sites are yet to be determined. For this purpose, confirmation of the connection parameters from the main potential users is required.

Expected benefits:

Significant contribution to decarbonisation of the energy sector in Bulgaria;
Economic and environmental benefits for the region.

Rehabilitation, modernization and expansion of the Bulgarian gas transmission system - Phase 3	
Project identification in lists: Project for Rehabilitation, modernization and expansion of the Bulgarian gas transmission system (PCI 6.8.2 in the Fifth list of Projects of Common Interest) Project TRA-A-298, TYNDP2024 of ENTSOG	
Type of project: High pressure gas pipeline and auxiliary facilities	
Technical data (Phase 3): New gas pipeline Gorni Bogrov - Novi Iskar of 19 km length, DN 700; New Compressor station Bogrov - 20 MW.	
Estimated commissioning date:	The realisation of the investment depends on decisions to be made regarding the increase of capacity of the Interconnection Bulgaria - Serbia (IBS)
Project phase:	Planning
Expected benefits: The increase of capacity of the Interconnection Bulgaria - Serbia (IBS) from 1,8 to 3,2 bcm/y.	
Project website: https://www.bulgartransgaz.bg/rehabilitaciya	

5.2. Development of the hydrogen infrastructure plans in the light of green transition.

The significant potential of the Eastern Mediterranean region and South East Europe for both green hydrogen production and its import from reliable partners will encourage the investments in hydrogen infrastructure. Bulgartransgaz EAD and the Greek transmission operator DESFA S.A. develop together interconnection projects for entirely new hydrogen networks, synchronizing their decisions regarding the concepts of their hydrogen projects.

With the approval of the European Commission, the project for hydrogen transport infrastructure on the territory of Bulgaria was granted the status of a project of pan-European interest and was included in the First list of Projects of Common Interest (PCI) and projects of mutual interest (PMI) of the EC, published on 28.11.2023 (described below as a hydrogen transmission network in Bulgaria (Phase 1). Its objective is to establish a hydrogen transmission network in Bulgaria with a transmission possibility from/to Greece, with connectivity to a similar hydrogen infrastructure on Greek territory, with DESFA as operator.

The Hydrogen Transmission Infrastructure in Bulgaria (Phase 2) project is in the planning stage, which represents a continuation of the hydrogen transmission infrastructure of Phase 1 crossing the interior of the country to the border with Romania.

The combination of the two projects constitutes the "backbone" of the Bulgarian hydrogen transmission infrastructure, ensuring cross-border connectivity with Greece and Romania as well as with the countries of Central Europe.

The projects will contribute to the implementation of the South-East European Hydrogen Corridor that will provide a route for the transport of pure hydrogen from the South Eastern to Central Europe from local production and imports as well.

The projects for hydrogen transmission infrastructure on the territory of Bulgaria are part of the scenarios for development of the hydrogen networks of the EHB, as well as part of a regional initiative for construction of the South East Hydrogen Corridor (SEEHyC).

The joint project of Bulgartransgaz EAD and DESFA S.A. for the smartening of the existing Greek & Bulgarian gas transmission systems for the integration of low carbon and renewable gases also has the potential to acquire a key European infrastructure status. The aim of the project is to adapt the existing natural gas networks of Greece and Bulgaria to transport natural gas mixtures with up to 10% hydrogen. Activities are planned for the digitalization of the gas network and the integration of components and systems that will allow for more effective management, interactive and intelligent monitoring, measurement and control of the quality of transmission of natural gas mixtures in the gas networks.

The development of hydrogen projects will contribute to the gradual decarbonisation of the gas sector and will provide the possibility to transport and use low-carbon gases on the territory of Bulgaria.

Hydrogen transmission infrastructure in Bulgaria (Phase 1)

Project identification in lists:

PCI 10.3.2 Internal hydrogen infrastructure in Bulgaria towards the Greece border, part of the first list of PCIs and PMIs of the European Union in accordance with Regulation (EU) 2022/869.
 Part of the EHB hydrogen network development scenarios
 Part of the South East Hydrogen Corridor development scenarios under the ECH2A initiative
 Part of the SEEHyC regional initiative

Type of project: H2 infrastructure and adjacent facilities

Project description: New H2 infrastructure on the territory of Bulgaria, suitable for transporting 100% hydrogen. The project is being developed in coordination with a H2 infrastructure project on the territory of Greece, with operator DESFA, and will create conditions for a bidirectional cross-border hydrogen transmission between Bulgaria and Greece at a new connection point in the Kulata/Sidirokastro region.

Technical data:

New pipeline with a length of approximately 250 km, DN1000.
 Two new compressor stations with a total of about 48 MW in the area of Petrich and Dupnitsa.

Start point: Sofia Region, Republic of Bulgaria
 End point: Sidirokastro region, Republic of Greece



Expected amount of the investment:

~ EUR 860 million, VAT excluded.

Estimated commissioning date:

2029

Project phase:

Preparation for a Feasibility Study

Expected benefits:

Contributes to sustainable economic growth;
 Creates conditions for phasing out fossil fuels;
 Contributes to national and European decarbonisation and carbon neutrality targets by 2050;
 Important part of a future hydrogen corridor from South East to Central Europe.

Project website: <https://www.bulgartransgaz.bg/pages/poi-10-3-2-vatreshna-infrastruktura-za-vodorod-v-balgariya-v-posoka-kam-granicata-s-garciya-242.html>

Hydrogen transmission infrastructure in Bulgaria (Phase 2)

Project identification in lists:

Applied for inclusion in the second PCI list under the new TEN-E Regulation (EU/2022/869)
 Part of the EHB hydrogen network development scenarios
 Part of the South East Hydrogen Corridor development scenarios under the ECH2A initiative
 Part of the SEEHyC regional initiative

Type of project: H2 infrastructure and adjacent facilities

Project description: New H2 infrastructure on the territory of Bulgaria, suitable for transporting 100% hydrogen. The project is the second phase of the hydrogen transport network in Bulgaria. The project will create the conditions for bi-directional cross-border H2 transport between Bulgaria and Romania at a new hydrogen interconnection point in the region of Ruse/Giurgiu.

Technical data:

New pipeline of approximately 330 km length, DN1000
 Three new compressor stations

Start point: Sofia district (Novi Iskar), Republic of Bulgaria
 End point: the region of Ruse/Giurgiu, Republic of Bulgaria/Romania



Expected amount of the investment:

~ EUR 1152 million, VAT excluded.

Estimated commissioning date:

2029

Project phase:

Planning

Expected benefits:

Contributes to sustainable economic growth;
 Supports the process of large-scale hydrogen implementation, both in Bulgaria and in the region of South-East Europe.
 Contributes to national and European decarbonisation and carbon neutrality targets by 2050;
 Important part of a future hydrogen corridor from South East to Central Europe.

Smartening of existing Greek & Bulgarian Gas Transmission System for the integration of hydrogen and renewable gases in the network - SmartSwitch project (SmartSwitch project)³
Joint project of Bulgartranzgaz EAD and DESFA S.A.

Project identification in lists:

RET-N-558, ENTSG TYNDP2024 (*initial project idea*)

Applied for inclusion in the second PCI list under the new TEN-E Regulation (EU/2022/869)

Part of the EHB hydrogen network development scenarios

Type of project: Project in the category "Smart Gas Transmission Networks"

Description of the project: Smartening the existing gas transmission infrastructure in Bulgaria and Greece with the necessary facilities, digital elements, installations and solutions to create possibilities to integrate and transport renewable gas mixtures in concentrations up to 10% hydrogen. Introduction of intelligent systems for transmission monitoring, control and management.

Technical data:

The activities on the Bulgarian territory cover the entire existing gas transmission infrastructure and will be determined after the completion of the planned studies.



Expected value of the investment on the Bulgarian territory:

~ EUR 256.9 million, VAT excluded.

Estimated commissioning date:

2029

Project phase:

Planning

Expected benefits:

Reduction of greenhouse gas emissions;
 Achieving gradual decarbonisation of energy and economy, and providing conditions for increasing industry competitiveness;
 Improving the flexibility and efficiency of the gas transmission system;
 Access to sustainable, environmentally friendly energy carrier (H₂) for all market participants.

³ The data specified in the project fiche refers only to the project implemented on the Bulgarian territory.

5.3. Other Bulgartransgaz EAD infrastructure development projects

5.3.1. Interconnection Bulgaria – North Macedonia

The project is in a conceptual phase and envisages the construction of a new gas interconnection between the Republic of Bulgaria and the Republic of North Macedonia following the route Petrich - Strumica.

The development of interconnectivity between Bulgaria and North Macedonia will boost energy security and contribute to further energy market integration.

In this regard the following documents have been signed:

- Memorandum of Understanding and cooperation in the field of natural gas between the Ministry of Energy of the Republic of Bulgaria and the Ministry of Economy of the Republic of North Macedonia
- Agreement between Bulgartransgaz EAD and Macedonian Energy Resources Joint Stock Company (currently NOMAGAS AD Skopje) for carrying out a feasibility study on the construction of a new gas interconnection between the Republic of Bulgaria and the Republic of North Macedonia.

Possibilities are studied for a market test for the project to decide on the implementation of the interconnector.

5.3.2. Development of the existing network by construction of new gas pipeline branches

The development of the existing network will contribute to the creation of opportunities to achieve a sustainable environment favourable to the development of industry and the economy. Besides supporting the economy, the gas transmission network expansion in new regions is directly related to their development. Providing access to a sustainable and environmentally friendly energy source such as the natural gas, creates an opportunity for gasification of new settlements, increasing the competitiveness of economic entities and subsequently reducing GHG and pollutant emissions by replacing traditionally used solid and liquid fuels. In this context, the project for high-pressure gas transmission infrastructure to supply consumers in Maritsa East Basin is particularly important, as it has the potential to make a significant contribution to the transition to decarbonisation of these regions.

5.4. Major projects for gas infrastructure reconstructions, rehabilitations and overhauls

5.4.1. Overhauls of sections of the gas transmission network

The maintenance activities of the gas pipeline network during its operation found out amortisation, most of which relates to metal loss. Repairs are carried out in a timely manner to restore the gas pipelines' strength characteristics and replace their anti-corrosion coating, according to the prescribed repair programmes. Sections of the DN 1000 gas transmission pipelines for the Republic of Turkey and the Republic of Greece and the Republic of North Macedonia and of the main gas pipeline - the northern semi-ring are planned for replacement.

5.4.2. Overhauls of gas turbine engines and scheduled maintenance and inspections of GTCUs

All gas turbine engines (GTE) have the so-called ***between overhaul resource*** in working hours (resource until inspection) and ***general technical resource*** in working hours which are in line with the respective operational documents and the aim is to ensure the operational reliability, safety, efficiency and preservation of the operational parameters of the GTE.

Following expiry of the between overhaul resource or in case of failure of the equipment during operation, an overhaul shall be carried out to recover the mechanical, environmental and gas dynamic parameters, as well as to ensure its safe and reliable operation in the future (following the overhaul) working hours until reaching the general technical resource.

5.4.3. Construction of pigging facilities (launch and receive chambers) for gas pipeline branches Razgrad, Sevlievo, Dimitrovgrad and Plovdiv

Currently there are no pigging facilities installed on these branches. The construction of launch and receiving traps will enable regular cleaning and in-line inspections to track the actual operating state of the transmission gas pipelines without any need of gas flow interruption and the maintenance of the design pressure as well.

The implementation commenced of the spatial planning and investment design activities for the pigging facilities of the gas pipeline branches to Plovdiv and Razgrad.

For the site: Launch and receive traps on gas pipeline branch Razgrad DN300, including stage 1 Launch trap of PF and stage 2 Launch trap of PF Detailed spatial plans Parcelling Plans have been developed. For stage 2 DSP-PP has been approved. For stage 1 DSP-PP has been submitted for consideration and approval to the competent authority - Losnitsa municipality. An investment design has been prepared for the site.

For the site: DSP-PP have been prepared for Launch and receiving traps at gas pipeline branch Plovdiv DN 500 - Launch - Receiving District Heating Company Plovdiv Sever and Launch DN 300 – Receiving DN 300 Heating Station Plovdiv South. For stage 1 DSP-PP has been approved. An investment design has been prepared for the site.

DEVELOPMENT OF THE CAPACITY OF BULGARTRANGAZ EAD GAS INFRASTRUCTURE IN THE PERIOD 2025-2029

The planned activities for the period 2025-2029 will ensure the adequacy of Bulgartransgaz EAD infrastructure in connection with the efforts of Bulgaria and the countries of the region to diversify the natural gas supply sources and routes.

Estimated capacities for the period 2025 -2029*

As of 1 January, MWh/d	2025	2026	2027	2028	2029
Entry capacity	1,573,617	1,619,753	1,672,580	1,688,744	1,688,744
IP Strandzha 2/Malkoclar	586,076	586,076	586,076	586,076	586,076
IP Strandzha/Malkoclar	118,076	118,076	118,076	118,076	118,076
IP Negru voda 1	216,528	216,528	216,528	216,528	216,528
IP Ruse/Giurgiu	43,373	43,373	43,373	43,373	43,373
IP Stara Zagora	123,037	123,037	159,700***	159,700***	159,700***
IP Kalotina/Dimitrovgrad	7,703	7,703	7,703	7,703	7,703
GMS Chiren	43,104	53,880	70,044	86,208	86,208
Local Production	26,000	26,000	26,000	26,000	26,000
IP Kulata/Sidirokastro	66,616	101,976	101,976	101,976	101,976
IP Kireevo/Zaycar	343,104	343,104	343,104	343,104	343,104
Exit capacity	1,665,705	1,705,655	1,864,431	1,880,595	1,880,595
IP Negru voda 1/Kardam	157,771	157,771	294,971	294,971	294,971
Exit zone Bulgaria	294,946	324,120	324,120	324,120	324,120
IP Ruse/Giurgiu	26,852	26,852	26,852	26,852	26,852
IP Stara Zagora	23,458	23,458	23,458	23,458	23,458
IP Kalotina/Dimitrovgrad	52,743	52,743	52,743	52,743	52,743
IP Kulata/Sidirokastro	120,228	120,228	120,228	120,228	120,228
Kyustendil/Zhidilovo	33,321	33,321	38,733	38,733	38,733
IP Kireevo/Zaycar	407,436	407,436	407,436	407,436	407,436
IP Strandzha/Malkoclar	505,846	505,846	505,846	505,846	505,846
GMS Chiren	43,104	53,880	70,044	86,208	86,208

*The indicated capacity values refer to January 1 of the respective year.

**The included capacity increase is dependent on the implementation of a project by the neighbouring operator ICGB AD.

CONCLUSION

Bulgartransgaz EAD is the combined gas operator providing licensed services of natural gas transmission and storage in Bulgaria. The Company operates sites of national importance and strategic sites for the country, including Chiren UGS.

In the last years, Bulgartransgaz EAD has realised significant investments in the rehabilitation, modernization and capacity increase of the existing gas infrastructure. Along with the ongoing and planned infrastructure expansion projects, the actions taken strengthen the country's energy security and support the diversification and liberalisation of the gas markets at national, regional and European levels.

The priority infrastructure development activities of Bulgartransgaz EAD for the period 2025-2034 include:

- Maintenance of technically operational, reliable and high-efficiency main and auxiliary gas infrastructure;
- Development, rehabilitation and expansion of the gas transmission and storage infrastructure;
- Improvement of the interconnectivity;
- Expansion of the transmission capacity, storage, injection and withdrawal capacity
- Adaptation of the existing gas infrastructure to operate with hydrogen up to 10%;
- Construction of new infrastructure for the transmission of clean hydrogen.

The implementation of the planned new gas infrastructure projects and targeted investments to optimise and maximise the capacity of the existing networks is expected to lead to a significant increase in the quantities of natural gas from alternative sources and reliable partners that will be transported through the Company's gas transmission system both for Bulgaria and the countries of the region of Central and Eastern Europe.

The Company pursues a consistent policy to improve the connectivity with the neighbouring countries through the successful cooperation with the transmission system operators in the region. Thus, favourable conditions have been created for the integration of the gas markets, enhancing the energy security and promoting the competition for the benefit of end users.

In the conditions of a dynamically changing energy environment, Bulgartransgaz EAD is effectively developing its infrastructure in accordance with the national, regional and European priorities in the field of energy.

The Company is among the leading initiators of the Vertical Gas Corridor concept, and the implementation of the key infrastructure projects will provide the necessary levels of capacity for the transmission of increasing natural gas flows from south to north, increase the energy security, improve the conditions for diversification of supplies and contribute to the integration, liberalisation and stability of the gas markets in the region.

Natural gas will continue to play an important role as a bridge fuel to achieve the EU's 2030 greenhouse gas reduction targets and a climate-neutral economy by 2050.

In the context of the energy transition Bulgartransgaz EAD takes part in European initiatives involving the development of hydrogen economy. The Company works to reduce its carbon

footprint and increase the environmental sustainability by planning projects to integrate renewable and low-carbon gases into Bulgaria's gas transmission network, as well as building a new infrastructure for the transport of clean hydrogen.

Bulgartransgaz EAD will continue to ensure reliable transmission and storage of natural gas, taking active actions to support national and pan-European goals related to the security of supply, diversification of sources and routes as well as decarbonisation of the energy system.

SOURCES USED

- 2025 - 2029 Business Programme of Bulgartrngaz EAD;
- Bulgargaz (www.bulgargaz.bg);
- Bulgartrngaz EAD (www.bulgartrngaz.bg);
- Bulgarian Energy Holding (www.bgenh.com);
- National Statistical Institute - GDP, PEC, EEC and other data (www.nsi.bg);
- Data on natural gas consumption (<https://ec.europa.eu/eurostat>);
- Annual implementation reports of the Energy Community Secretariat (<https://www.energy-community.org>);
- Reports of the European Commission on gas market in the EU for 2024 (www.ec.europa.eu);
- Integrated plan in the field of energy and climate of the Republic of Bulgaria updated 2024;
- Information related to natural gas production in Bulgaria, Petroceltic International Plc webpage (www.petroceltic.com);
- Energy and Water Regulatory Commission(<https://www.dker.bg/>);
- Ministry of Energy of the Republic of Bulgaria (www.me.government.bg);
- National energy balance of the Republic of Bulgaria;
- National Recovery and Resilience Plan;
- 2024 ENTSG Ten-Year Network Development Plan (www.entsg.eu)
- Public information related to the development of the gas market in the region, published on the following web pages:
 - Bulgargaz EAD(www.bulgargaz.bg)
 - Bulgartrngaz EAD (www.bulgartrngaz.bg);
 - Bulgarian Energy Holding (www.bgenh.com)
 - NOMAGAS AD (<https://nomagas.com.mk>);
 - ANRE - National Energy Regulatory Authority (www.anre.ro);
 - Balkan Gas Hub (www.balkangashub.bg);
 - BOTAS (www.botas.gov.tr);
 - CEPA - (www.cepa.org);
 - Consilium Europa – (www.consilium.europa.eu);
 - Delek Drilling (www.delekdrilling.co.il);
 - DEPA S.A. (www.depa.gr);
 - DESFA S.A. (www.desfa.gr);
 - EIA – U.S. Energy Information Administration (www.eia.gov);
 - Energean Oil & Gas (www.energean.com);
 - ENTSG (www.entsg.eu);
 - ETKILIMAN – (www.etkiliman.com.tr);
 - Gastrade (www.gastrade.gr);
 - GIE – Gas Infrastructure Europe (www.gie.eu);
 - HRADF (www.hradf.com);
 - ICGB AD (www.icgb.eu);
 - IEA - International Energy Agency (www.iea.org);
 - IENE – Institute of Energy for South–East Europe (www.iene.eu);
 - IGI Poseidon (www.igi-poseidon.com);
 - IGU (<https://www.igu.org>);
 - IICEC – Istanbul International Center for Energy And Climate (<https://iicec.sabanciuniv.edu>);
 - ITGI (www.edison.it);
 - JP Srbijagas (www.srbijagas.com);
 - LNG Hrvatska (www.lng.hr);
 - Ministry of Energy and Natural Resources – Republic of Turkey (www.enerji.gov.tr);
 - Ministry of Foreign Affairs - Turkey's Energy Profile and Strategy (www.mfa.gov.tr);
 - NER JSC Skopje - Macedonian Energy Resources Skopje (www.mer.com.mk);
 - Prometheus Gas (www.prometheusgas.gr);
 - Romgaz (www.romgaz.ro);
 - Shah Deniz (www.bp.com);

- TAP (www.trans-adriatic-pipeline.com);
 - Transgaz S.A. (www.transgaz.ro);
- Draft Strategy for Sustainable Development of the Republic of Bulgaria to 2030 with a Horizon to 2050;
- List of Projects of Common Interest, website of the European Commission, DG Energy, (www.ec.europa.eu);
- Strategy for Energy Systems Integration;
- EU Hydrogen Strategy.