conexus
BALTIC GRID

Natural gas transmission system operator

ANNUAL ASSESSMENT REPORT FOR THE YEAR OF 2024

Riga, 2025

CONTENTS

ABBREVIATIONS

RES	Renewable energy resources
AST	JSC "Augsprieguma tīkls" (High-voltage network)
CEF	Connecting Europe Facility
CINEA	European Climate, Infrastructure and Environment Executive Agency
Conexus or the Company	JSC "Conexus Baltic Grid"
CO_2	Carbon dioxide
ENTSO-E	European Network of Transmission System Operators for Electricity
ENTSOG	European Network of Transmission System Operators for Gas
GIPL	The interconnection between Poland and Lithuania
Inčukalns UGS	Inčukalns underground gas storage
PCI	Project of Common Interest
Cabinet Regulations No. 312	Cabinet Regulations No. 312 of 19 April 2011 "Procedure for the Supply of Energy Users and Sale of Heating Fuel During a Declared Energy Crisis and in the Event of a Thread to the State".
Cabinet Regulations No. 503	Cabinet Regulations No. 503 of 9 August 2022 "Regulations Regarding Supply of Energy Users When the Early Warning and Alert Levels are Declared".
NC CAM	Network Code for the Capacity Allocation Mechanism
NECP	National Energy and Climate plan
NOx	Nitrogen oxides
OBA	Operational balancing account
TSO	Transmission system operator
LNG	Liquefied natural gas
GHG	Greenhouse effect gases
PUC	The Public Utilities Commission
TYNDP	Ten-Year Network Development Plan

GENERAL INFORMATION

Pursuant to Article 43[1] (2) of the Energy Law, the natural gas transmission system operator is required to prepare an annual assessment report on the adequacy of supply and consumption and the security of supply of natural gas in the country (hereinafter referred to as the "Annual Assessment Report"). The Annual Assessment Report for the year of 2024 has been prepared in accordance with the requirements of the Cabinet Regulations No. 482 of 20 June 2006 "Regulations Regarding the Annual Assessment Report of a Natural Gas Transmission System Operator". In accordance with Paragraph 5 of these Regulations, the transmission system operator shall prepare and submit the Annual Assessment Report to the Ministry of the Economics and the PUC by 1st of June each year.

JSC “Conexus Baltic Grid” is an independent unified natural gas transmission and storage system operator in Latvia, managing one of the most advanced natural gas storage facilities in Europe - Inčukalns underground gas storage facility and the natural gas transmission system connecting the Latvian natural gas market with Lithuania and Estonia.

Conexus customers - users of the natural gas transmission and storage system - represent several countries in the Baltic Sea region - Finland, Estonia, Latvia, Lithuania, and Poland, as well as other European countries - Norway, Belgium, Czech Republic, Denmark, Austria, Germany, the United Kingdom and Switzerland. Users range from private domestic companies to state-owned and multinational companies representing different business sectors - natural gas wholesale and retail, energy production, heating and manufacturing.

Conexus is committed to infrastructure sustainability and safety, security of natural gas supply and high quality of services, which contribute to market development and provide economic value to customers and society as a whole. Conexus' natural gas transmission and storage services are regulated by the PUC.

Conexus is a socially responsible company that, by adding economic value, ensures the overall development of the industry, the growth of its employees, sustainable employment, while at the same time ensuring that its technological processes have a minimum impact on the environment.

Conexus' values, mission and vision set the moral compass for the Company's strategic objectives, which will be achieved through strategic initiatives.

WHY DO WE EXIST?

Mission

To ensure reliable gas transmission and storage, contributing to the decarbonization of the energy sector and market development.

WHO DO WE WANT TO BE?

Vision

Sustainable gas transmission and storage system operator in a regionally integrated energy market.

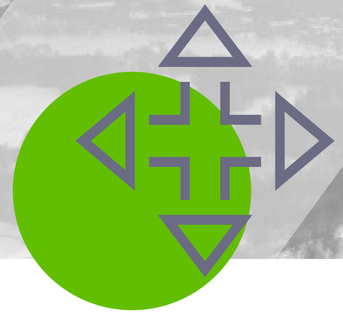
WHAT IS IMPORTANT TO US?

Values

Safety and security

It is important for us that gas transmission and storage are safe and reliable.

Competence

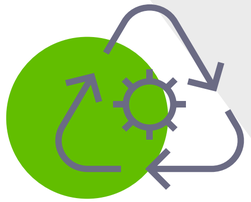
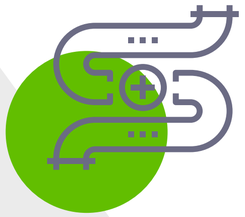


We value the competence, knowledge, professional experience and development of our employees.

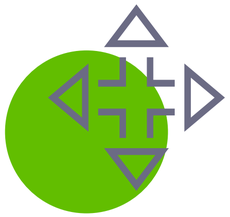
Collaboration

We support each other in our decision-making, we listen and we look for common solutions internally and with our customers, existing and potential partners.

Conexus has identified three strategic objectives for the strategic planning period:

MARKET DEVELOPMENT 	**Promote the development and further integration of the gas market, including hydrogen and other gaseous energy carriers**	• **Facilitate regional market integration** • **Promote cooperation with other regional transmission system operators (TSOs)** in developing a common position for the integration of biogas and hydrogen into transmission networks, **supporting the injection of biomethane into the transmission system** • **Further development of Inčukalns UGS services,** providing greater flexibility, including the possibility of compression withdrawal
INFRASTRUCTURE SAFETY AND SECURITY OF SUPPLY 	**Ensure accessible and reliable transmission and storage infrastructure, while exploring and promoting adaptation options for the introduction of other gaseous energy carriers**	• **Introduce projects of common interest** • **Undertake research and development projects** to identify the technical feasibility and investment required to adapt existing infrastructure to the use of natural gas/hydrogen mixtures or pure hydrogen, including the construction of infrastructure dedicated to hydrogen • Asset management fit for the challenges of the future
SUSTAINABILITY 	**Focus on climate and environmental sustainability**	With a focus on sustainability, Conexus will focus on environmental aspects: • **E** – regional market integration promoting the development of renewable gases, secure transmission and storage infrastructure, focusing on reducing NOx and GHG emissions • **S** – safety-oriented culture, professional and development-oriented team • **G** – compliance with the Latvian Corporate Governance Code

The strategic objectives are set in line with Conexus' values, vision and mission. In addition to the strategic objectives, Conexus has set horizontal objectives that are closely linked to all planned medium-term activities. The horizontal objectives complement and contribute to the strategic objectives.

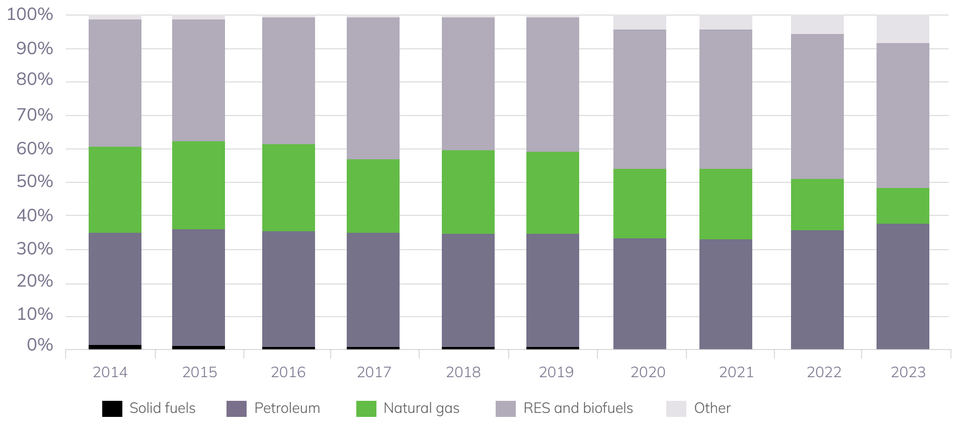
	**Focus on organisational development and efficiency**	Conexus will facilitate access to finance and increase operational efficiency.
	**Digitalisation and cybersecurity**	Conexus will continue digitisation projects focusing on operational technologies, physical security, fire safety and cyber security.
	**Professional and development-oriented team**	Conexus value is a professional team, therefore the Company will elaborate a programme enabling employees to develop their skills through individual development plans. The acquisition of new competences to adapt to renewable gas technologies will be promoted, as well as the transfer of knowledge and skills from long-standing employees to new employees. To foster the professional development of the team, Conexus will establish a competitive and flexible remuneration system.

1. KEY INDICATORS IN 2024

2. NATURAL GAS DEMAND IN LATVIA IN 2024

The role of natural gas in Latvia's energy mix, although still significant, is gradually declining, mainly due to its substitution by renewable energy sources. Most of the demand for natural gas is provided by the users who consume natural gas to generate electricity or thermal energy, so natural gas consumption is closely linked to air temperature fluctuations, natural gas prices on the market, and the competitiveness of natural gas-generated electricity on the Baltic and Nordic electricity markets.

Figure 2.1 **Primary energy consumption in Latvia[1] (%), 2014 - 2023**



[1]European Commission statistics. Available at: https://energy.ec.europa.eu/data-and-analysis/eu-energy-statistical-pocketbook-and-country-datasheets_en#country-datasheets

In 2024, the volume of natural gas transported for the needs of Latvian consumers was 8.8 TWh, a 7% increase compared to 2023. Increase in consumption was influenced by relatively colder weather conditions at the beginning of the year. January, with an average air temperature of 5.2°C, was 2.2°C colder than norm, leading to natural gas consumption increase by 73% compared to the same period in 2023, and the only month in 2024 with an average temperature below norm. Overall, last year, together with 2020, was the warmest in Latvia's observational history, with the average air temperature of +8.7°C, representing 1.9°C above the climatic standard[2]. At the same time, natural gas consumption for electricity generation increased - the year of 2024 showed a 18% increase in volume of electricity generated by thermal power plants, and that increase was observed for the second year in a row. The trend of recent years towards increase in the amount of energy generated by renewable sources, in particular solar power plants, continues, reducing, among other things, necessity for the use of natural gas in electricity generation. While in 2022 the total generation capacity of solar panels connected to the distribution system was around 100 MW, reaching 305 MW in 2023, towards the end of 2024, the total solar generation capacity reached 660 MW, which will continue to increase in 2025[3].

Figure 2.2 **Monthly volumes of natural gas delivered to the natural gas distribution system operator in Latvia (TWh)**

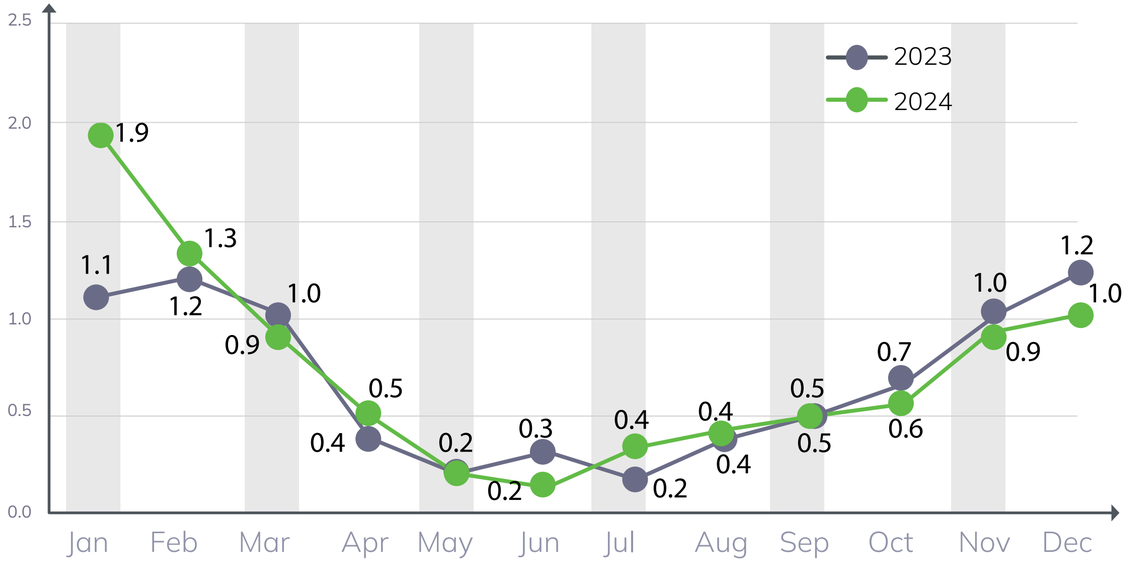
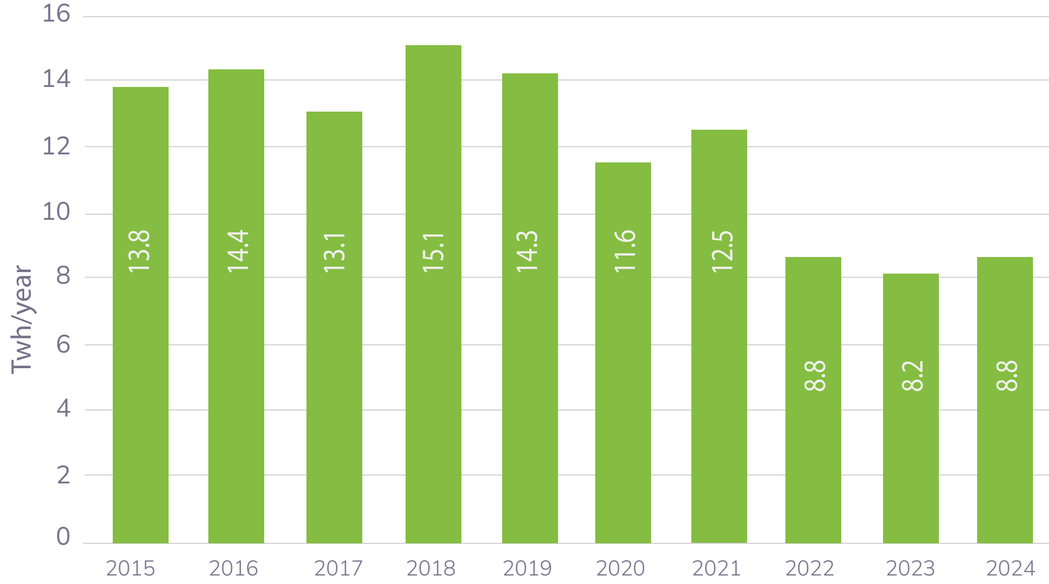
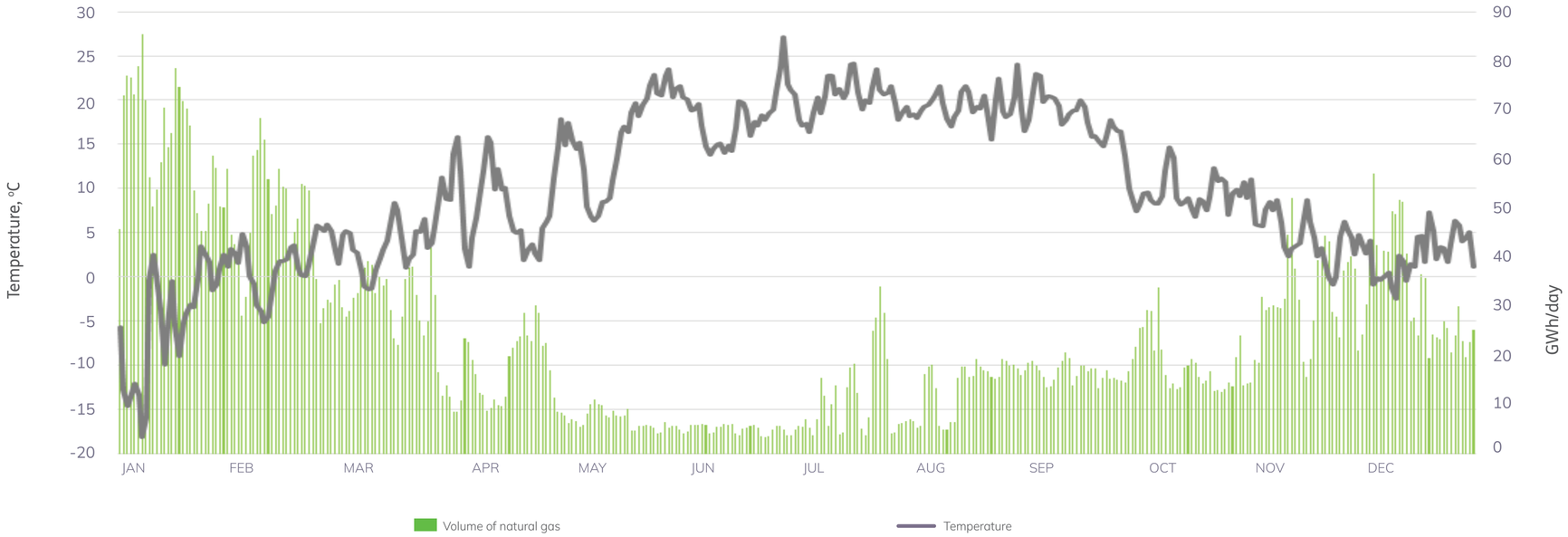


Figure 2.3 **Volume of natural gas delivered to the natural gas distribution system operator in Latvia (TWh)**



[2]Data from the Latvian Environment, Geology and Meteorology Center. Available at: https://klimats.meteo.lv/operativais_klimats/laikapstaklu_apskati/2024/gads/
[3]AST data. Available at: https://ast.lv/lv/electricity-market-review?year=2024&month=13

Figure 2.4 **Natural gas delivered per day (GWh) and average daily temperature in Riga (°C) into the Latvian natural gas distribution system[4], 2024**



According to the Company's estimates, Latvia's natural gas consumption can reach around 100 GWh/day on a winter day. In the winter of 2024, the maximum daily consumption of natural gas in Latvia was 85.36 GWh, an increase of 23.97 GWh/day compared to 2023, which can be explained by lower air temperature in the respective period. The lowest average daily air temperature in Riga was recorded on 7 January, when it dropped below -18°C. The minimum daily consumption of natural gas was on 23 June 2024 - 3.38 GWh/day, representing increase of 0.56 GWh compared to the previous year.

Maximum and minimum daily consumption of natural gas in Latvia in the year of 2024

DATE	Consumption (GWh)	Air temperature (°C)
7 January	**85.36**	**-18.1**
6 January	78.81	-13.3
23 June	**3.38**	**+17.8**
22 June	3.67	+18.3

[4]Data from the Latvian Environment, Geology and Meteorology Center. Available at: https://videscentrs.lvgmc.lv/noverojumu-arhivs/meteo/30096/active/4001/2024-01-01/2024-12-31

3. LATVIA'S 10-YEAR NATURAL GAS CONSUMPTION FORECAST

In January 2025, ENTSOG and ENTSO-E published a joint gas and electricity scenario report - the TYNDP 2022 Scenario Report[5], which described possible future energy scenarios for the European Union up to 2050. All scenarios are designed with a climate-neutral future in mind and are designed to reduce GHG emissions, to reflect the interactions between gas and electricity systems and to provide an assessment of infrastructure from an integrated system perspective.

National Trends[6] is the central scenario of the report, which reflects the National Energy and Climate Plans (hereinafter referred to as - NECP) of the Member States of the European Union. The plans have been submitted to the European Commission in accordance with the Regulation of the European Parliament and of the Council on governance in the field of energy union and climate action[7]. NECP 2030 is the key document for formulating long-term energy and climate policy, with the vision of a sustainable, competitive, and secure climate-neutral economy. Latvia's NECP 2030[8] was approved in 2024, and that includes various policy measures to move Latvia towards climate neutrality. Although natural gas is still expected to play a significant role in the primary energy mix in the future, renewable energy resources will continue to increase their share in Latvia's total energy consumption mix. Latvia's NECP envisages that Latvia's natural gas consumption could reach around 9 TWh in 2025 and around 6.5 TWh in 2030. In the Company's view, the medium-term forecast of the NECP is overly pessimistic regarding natural gas consumption, with the Company expecting a more gradual decrease in natural gas demand.

In July of 2021, the European Commission launched the European Union's Green Transformation Plan, which includes the energy and climate package "Fit for 55"[9], which aims to achieve a 55% reduction in greenhouse gas emissions by the year of 2030 and climate neutrality by the year of 2050.

By stabilising natural gas prices, competitiveness of gas as an energy source strengthens, and its use remains economically beneficial. At a certain level of natural gas prices, large industrial producers are expected to return to natural gas as a fuel. As soon as in the second half of 2023, gas prices returned to a competitive level, falling below 30 EUR/MWh in 2024, rising to 40 EUR/GWh in the second half of 2024 and even to 60 EUR/GWh in the winter period. The first quarter of 2025 showed return of the price to the level of 40 EUR/GWh. The price level has significant impact on gas consumption, which could exceed the 10 TWh mark in 2025, however, in the long term, it will maintain constant, but flat decreasing trend, which will be mainly related to lower demand of cogeneration plants for natural gas and progression of economy towards renewable energy sources.

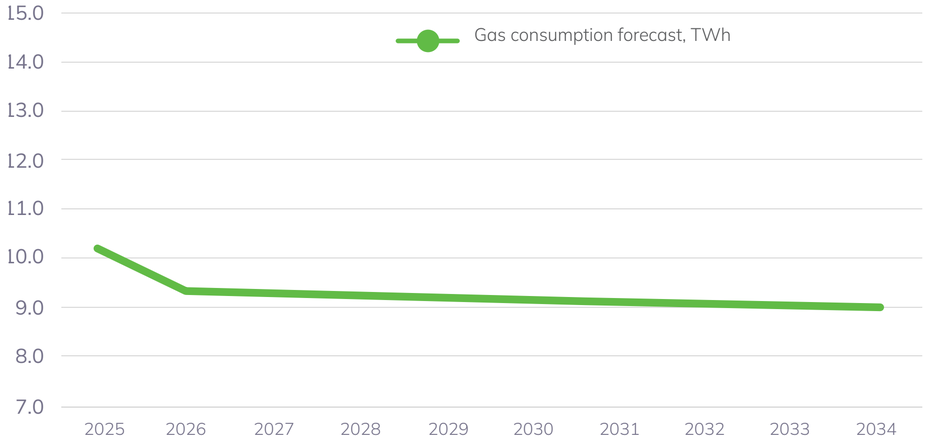
[5]ENTSOs website. Available at: https://2024.entsos-tyndp-scenarios.eu/
[6]from English - National Trends
[7]European Union website. Available at: https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX:32018R1999
[8]Ministry of Climate and Energy website. Available at: https://www.kem.gov.lv/lv/nacionalais-energetikas-un-klimata-plans-2021-2030-gadam
[9]European Commission website. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_21_3541

In the household segment, natural gas consumption is expected to be on a par with 2024 in the coming years (without returning to historical levels), while gradually declining in the longer term. This consideration can be explained by the households' energy efficiency measures and switching or diversification of heating equipment under the circumstances of high natural gas prices, observed in the previous years. The price of energy will be one of the main factors in households' choice between energy sources.

In the Company's opinion, natural gas consumption in the electricity generation segment may increase in the next 10 years, based on the expected increase in the amount of national generation due to synchronisation with the Continental Europe. The price of natural gas and meteorological conditions will continue to play an important role in the dynamics of natural gas demand as an energy source for electricity generation.

Conexus expects natural gas demand to stabilise over a 10-year perspective and for natural gas to play an important role in balancing renewable electricity generation. Although natural gas demand is expected to fall in the long term, the share of renewable gases such as biomethane in total structure of gas consumption will increase significantly. In the long term, natural gas will continue to play its role in providing the large amounts of energy capacity needed for stable electricity generation. Although heat generation from renewable energy sources is on the rise, natural gas will continue to play an important role as an alternative source of thermal energy in the long term, thus being able to compensate for sharp increases in demand in thermal energy.

Figure 3.1 **Gas consumption forecast for Latvia, (TWh)**

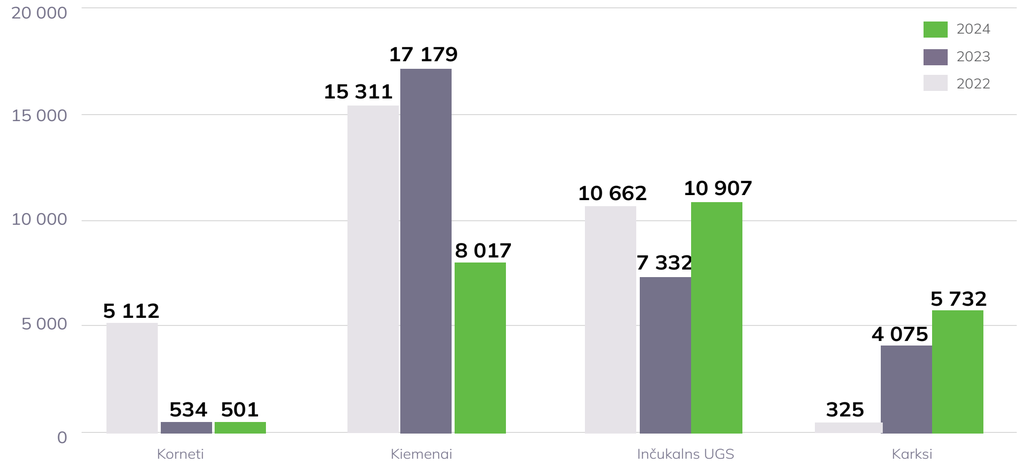


4. NATURAL GAS FLOWS IN 2024

4.1. Transmission system flow data

The total volume of natural gas transported in 2024 was 25.22 TWh representing 13.4% below the volume transported last year. Within the framework of the year, natural gas supplies for the needs of Latvia, Lithuania, Estonia, as well as Finland were secured from April, when the “Balticconnector” underwater gas pipeline was restored to operation. Total volume of natural gas consumption increased slightly. Increase in consumption was driven by both the cold weather in the first months of the year, which increased consumption for heating purposes, and higher volume of electricity generation in Latvia.

4.1 **Natural gas received into the transmission system in 2022, 2023, and 2024, GWh**

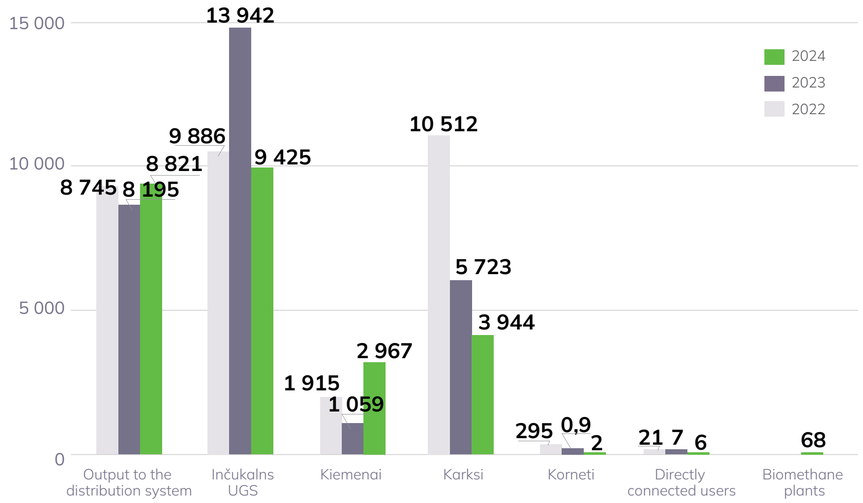


For the first time, biomethane produced in Latvia is a component of the gas transported, accounting for 0.27% of the total volume of gas transported. In line with the fundamental objective of the European Union's Green Deal, it is an important step in the sustainable development strategy, promoting the integration of green energy and more efficient use of local resources.

In 2024, dynamics of natural gas flows has changed: the largest supplies of natural gas to Latvia were still received from Lithuania, but compared to the previous year the volume of natural gas received from Lithuania has decreased by 53%. Reduction in supply from Lithuania was due to maintenance work at the Klaipėda LNG terminal from 1 May to 13 June and repair works of the Riga-Panevėžys gas transmission pipeline in August. Whereas, in 2024, during the injection season, Inčukalns UGS received significant volumes of gas in transit via Estonia from the Inkoo terminal in Finland. Volume of natural gas received in Latvia from Estonia increased by 1.65 TWh in 2024. There were no natural gas supplies from Russia during the reporting period. In October and November 2024, 0.5 TWh were transited from Luhamaa point to the Region of Kaliningrad.

During the reporting period, 9.38 TWh of natural gas were injected and 10.92 GWh were withdrawn at Inčukalns UGS. In contrast to the previous year, Inčukalns UGS had stock amounting to 19.7 TWh at the end of the 2024 injection season, representing 2 TWh below the volume at the end of the 2023 injection season.

4.2. **Natural gas delivered into the transmission system in 2022, 2023, and 2024, GWh**



Consumption of natural gas for Latvian consumers has increased by 7.58% compared to 2023. Several factors contributed to the increase in consumption: climatic conditions at the beginning of the year with lower air temperatures, which increased gas consumption for heating, and increase in electricity generation.

4.3. **Gas transported and gas supplied to DSO**

Year	Month	Quantity of gas transported	Quantity of supplied gas to DSO
		MWh	MWh
2024	JAN	3,950,523	1,927,815
	FEB	2,034,914	1,328,474
	MAR	1,303,066	905,126
	APR	1,280,047	505,993
	MAY	1,722,297	211,045
	JUN	2,621,482	151,039
	JUL	2,328,468	345,416
	AUG	1,728,976	426,292
	SEP	2,269,945	498,792
	OCT	1,745,307	564,720
	NOV	1,661,495	933,597
	DEC	2,572,552	1,017,347

4.2. Balancing operations

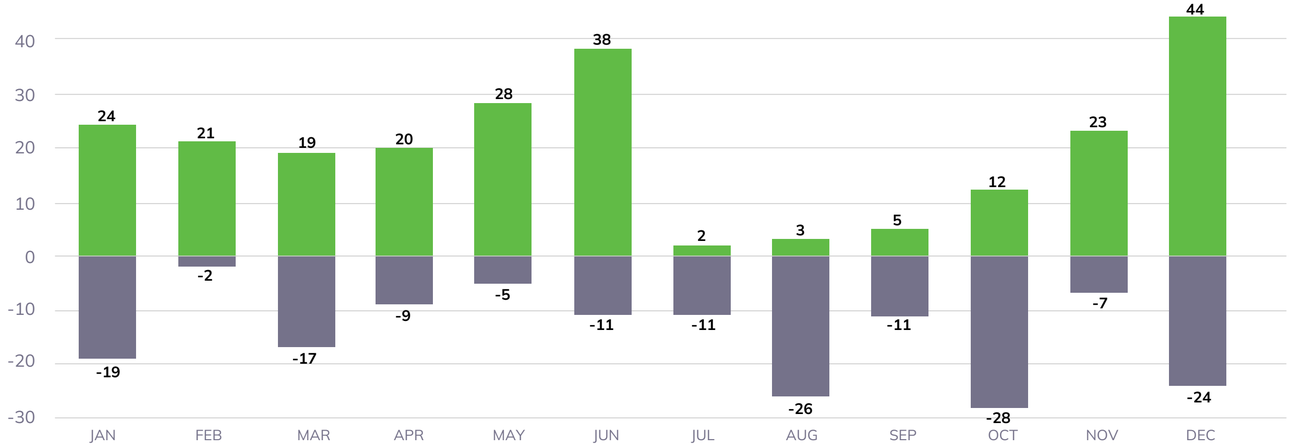
Within the process of ensuring operation of the Single Market Area, the Company performs daily calculation of users' imbalance and coordination of balancing operations in the Estonia-Latvia Single Balancing Area, including, where necessary, clearing accumulated system imbalance through balancing operations.

For the purposes of execution of balancing operations in 2024, the Company concluded two balancing service contracts with system users and the natural gas trading platform GET Baltic. In Q4 2024, a process for the procurement of a new balancing service and the conclusion of new balancing service contracts was organised jointly with the Estonian transmission system operator Elering. Two balancing service contracts will be concluded as a result of the procurement.

Balancing operations are primarily carried out on the GET Baltic trading platform (amounting to nearly 96% of all the transactions in 2024), however, in cases where the trading platform does not have sufficient liquidity or there is economic advantage of the proposal prices, the balancing service contracts previously concluded with the system users are also used.

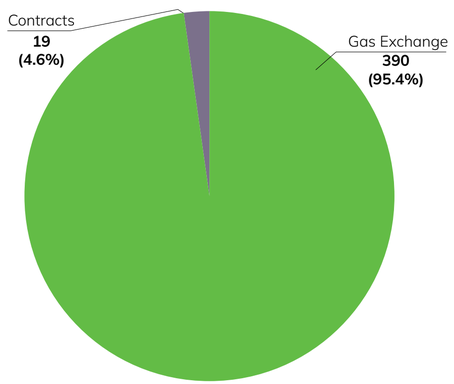
Offers of balancing services received under balancing service contracts are accumulated daily in the Company’s common balancing services register and ranked by system entry-exit points and sorted by directions according to the order of economic benefit.

4.4. **Balancing operations in the Estonia-Latvia Single Balancing Area in 2024, count**



In 2024, while performing duties of the settlement and balancing coordinator for the Estonia-Latvia Single Balancing Area, Conexus carried out a total of 409 balancing operations, injecting the missing natural gas into the balancing area if the amount of imbalance created by users was negative, or withdrawn excess natural gas from the balancing area if the amount of imbalance created by users was positive. 239 balancing operations were carried out to clear positive imbalances and 170 balancing operations - to clear negative imbalances within the framework of the year. The total number of balancing operations performed during the year is lower than in the previous year - 409 and 467 balancing operations, respectively, decrease in the number of the system users' positive imbalance clearing actions and increase during the negative imbalance clearing actions.

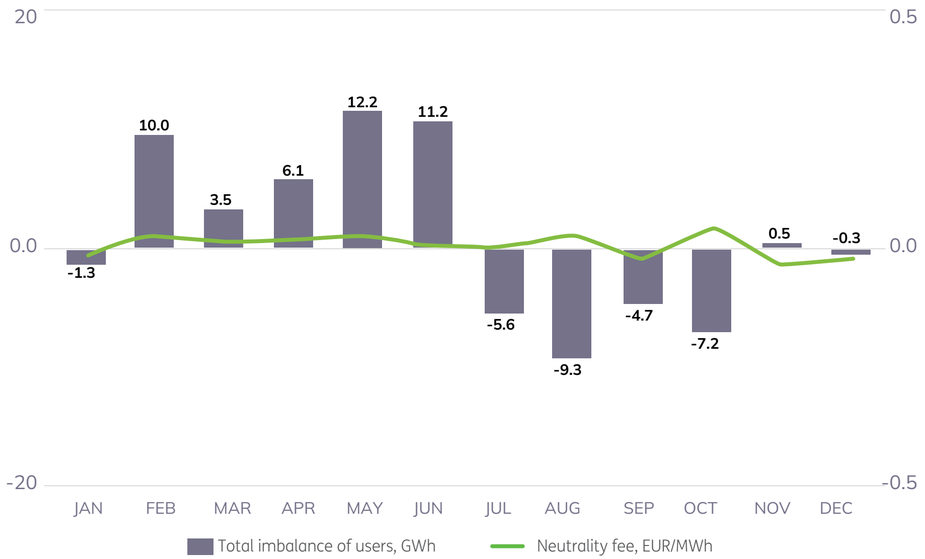
Figure 4.5 **Distribution of the number of balancing operations in 2024 (%)**



During the reporting period, 95.4% of all balancing transactions were executed on the trading platform, while the offers submitted by transmission system balancing service providers were used in 4.6% of cases. Compared to the previous year, the share of balancing transactions executed on the trading platform has decreased by three percentage points in 2024.

The total amount of absolute imbalance generated by all system users in the Estonia-Latvia Single Balancing Area in 2024 was 257.2 GWh. Balancing operations were carried out to clear the positive imbalance created by system users, amounting to 106.3 GWh, including 97.1 GWh on the trading platform and 9.2 GWh under balancing service contracts. Whereas balancing operations were carried out to clear the negative imbalance created by system users, amounting to 89.2 GWh, of which 69.5 GWh on the trading platform, and 19.7 GWh through the concluded balancing service contracts. Compared to the previous reporting period, the amount of absolute imbalance created by system users has increased by roughly 7.5%.

4.6 **System users' aggregate imbalance (GWh) and neutrality charge in 2024, EUR/MWh**



The neutrality fee applied in 2024, ranged from minus 0.04 EUR/MWh (November 2024) to plus 0.06 EUR/MWh (October 2024). In billing periods when the neutrality charge was negative, transmission system operators paid it to transmission system users, while in billing periods when the neutrality charge was positive, transmission system operators collected it from transmission system users. The average neutrality charge in 2024 was 0.01 EUR/MWh per month.

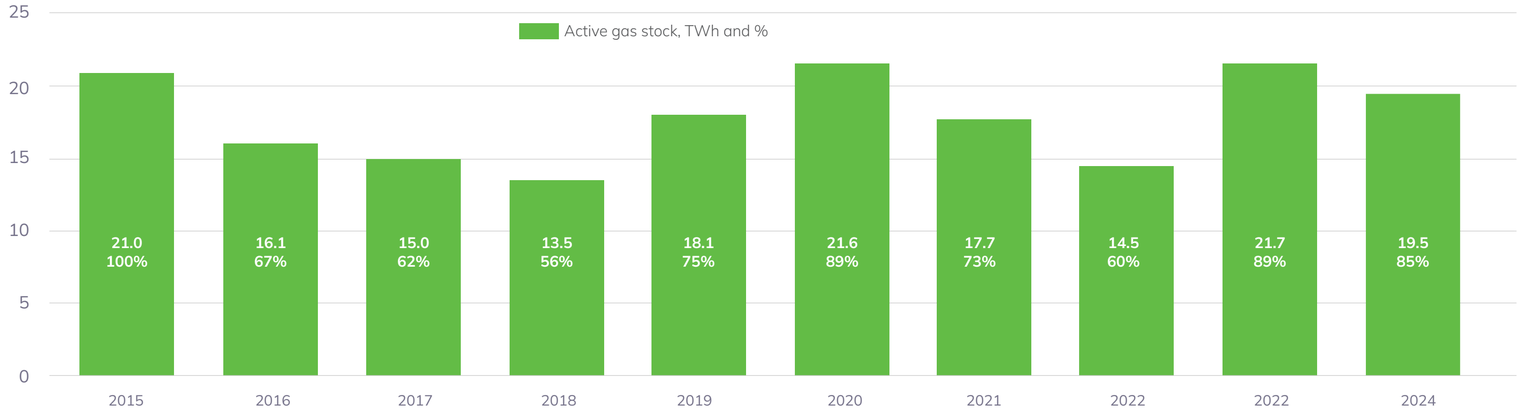
4.7 **Neutrality charge in 2024 (EUR/MWh)**

Month	Applicable neutrality charge, EUR/MWh
January	-0.01
February	0.04
March	0.02
April	0.03
May	0.04
June	0.01
July	0.01
August	0.04
September	-0.02
October	0.06
November	-0.04
December	-0.02
On average	**€ 0.01**

4.3. Storage system flow data

Physical natural gas withdrawal within the 2023/2024 storage cycle ended on 20 April 2024, and the balance of active natural gas in Inčukalns UGS before the beginning of the injection season on 1 May 2024 was 11.3 TWh. The amount of active natural gas in storage after the end of natural gas injection in October 2024 was 19.5 TWh, which represented 85% of the maximum active natural gas volume. Over the past three years, Latvia's average consumption of natural gas during the winter season has been 6.6-7.8 TWh, and the total volume of natural gas injected into the storage is significantly higher than consumption of the Latvia's heating season.

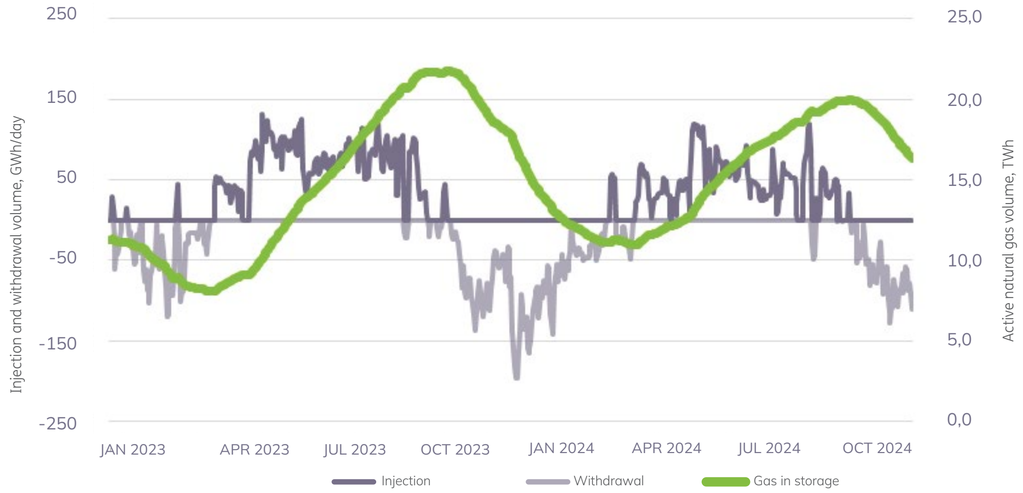
4.8. **Stock of active natural gas in the Inčukalns UGS after the end of the natural gas injection season (TWh and % of the technical capacity)**



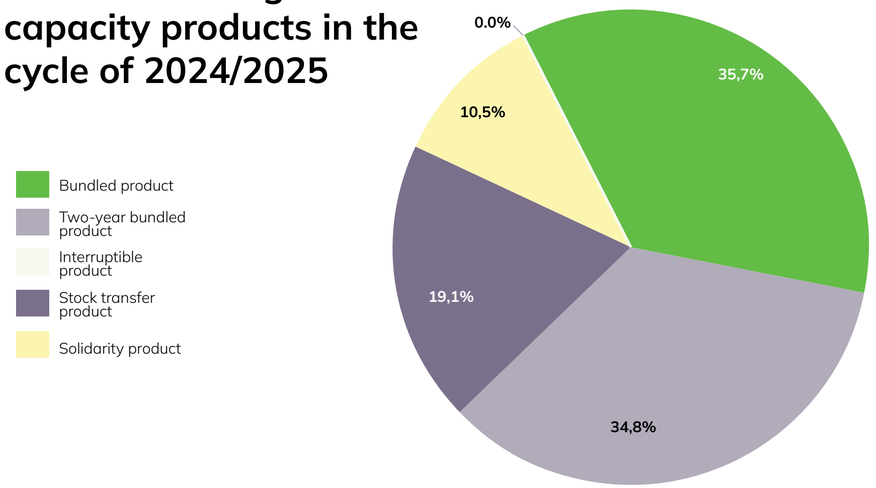
In 2024, 9,425 GWh of natural gas were injected and 10,907 GWh were withdrawn at Inčukalns UGS. Stock at Inčukalns UGS was significantly higher at the end of the 2024 injection season amounting to 19.5 TWh, representing 2.2 TWh below the volume at the end of the 2023 injection season.

The daily withdrawal of natural gas from Inčukalns underground gas storage with the maximum nationwide gas consumption was fixed on 05.01.2024 and amounts to 196.6 GWh/d, of which 73.3 GWh/d - for consumption in Latvia and 123.3 GWh/d - for use in other countries. On this day, the maximum volume of gas withdrawal from the storage was registered during the period from 17:00 to 18:00 amounting to the total volume of gas - 8.6 GWh/h, including 3.1 GWh/h for consumption in Latvia and 5.5 GWh/h - for use in other countries.

4.9. **Injection and withdrawal volumes (GWh/day) and active natural gas volume (TWh) at Inčukalns UGS in 2023 and 2024**



Reserved storage capacity products in the cycle of 2024/2025



For the 2024/2025 storage cycle, the available storage capacity was set at 23 TWh, of which 100% was booked. The storage capacity was reserved by users from the Baltic States, Finland, Poland, Germany, Switzerland and Norway.

Technical capacity of the storage facility for the 2025/2026 storage cycle is set at 24.7 TWh. In determining the technical capacity of the storage facility for the storage cycle, account is taken of the amount of energy security stocks that must be maintained by Inčukalns UGS in accordance with the Energy Law.

The gas supply situation in the Baltic Sea region has changed significantly in recent years, with several infrastructure projects coming in operation. The existing market conditions create competition between Inčukalns UGS and LNG terminals, so, in case of a small winter/summer price difference, user interest in storage services may decrease.

In order to enable Inčukalns UGS to operate efficiently as a regional storage facility, meeting both the needs of market participants and the national strategic reserve storage needs of the countries in the region, amendments to the Energy Law came into force on 1 October 2024, which introduced changes to Inčukalns UGS access procedure. Changes will facilitate the ability of the natural gas transmission and storage system operator to react promptly to changes in the natural gas market, as well as facilitate access to storage for energy suppliers from neighbouring countries, strengthening the security of supply by dividing the capacity available in the storage into solidarity and market components. The solidarity share, set at a maximum of 4 TWh, is earmarked for the security of natural gas supply needs of the countries in the region, such as the supply to protected customers. Use of the Solidarity Product requires a consent from the Ministry of Climate and Energy. Amount of the fee thereof is fixed by law until 30 April 2030 and the amount of capacity must be reserved by 1st December every year.

Whereas, from 1 May 2026, the market share of Inčukalns UGS will no longer be subject to the storage service tariff set by the PUC, with the fee being determined by storage capacity auctions. PUC will continue to supervise provision of the storage services by approving Inčukalns UGS access rules, including the offer of capacity products.

5. SUPPLY AND CONSUMPTION ADEQUACY ASSESSMENT

The adequacy assessment has been developed based on assumptions about the upcoming summer-winter season and according to the current conditions presented in the description of the scenarios. The assessment is not a forecast of the expected gas supply and consumption situation. Actual use of the gas infrastructure, including the volume of active natural gas in Inčukalns UGS, will be determined by the decisions of market participants, which will be influenced by external factors such as the winter/summer price difference, progress of new infrastructure projects, as well as political decisions.

Scenario of 2025/2026 in Baltic-Finland region:

from January 2023 gas supplies to all countries in the Baltic-Finland region from the Russian Federation stopped and the following conditions apply:

- the price of natural gas has fallen to a competitive level and stabilised;
- users in the Baltic-Finland region start using natural gas again;
- no input flows are foreseen at the Luhamaa entry and exit point towards the Estonia-Latvia Single Balancing Zone;
- The Hamina LNG terminal is available throughout the year and operates at 45% capacity;
- The Inkoo LNG terminal is available throughout the year and operates at 44% capacity. During the winter period, deliveries of one load per month are foreseen to cover peak consumption;
- Latvia and Lithuania mainly receive gas from Klaipeda LNG terminal and Inčukalns UGS, Estonia and Finland mainly receive gas from Inkoo LNG terminal and Inčukalns UGS;
- the combined technical capacity of the Klaipeda LNG terminal, the Inkoo LNG terminal and the Hamina LNG terminal, together with the Inčukalns UGS, significantly exceeds the projected gas consumption in the Finnish-Baltic region;
- after the gas withdrawal season, the minimum expected active gas balance of the Inčukalns UGS is at least 4 TWh, which includes the Baltic gas safety reserve for emergency situations and energy crisis.
- Significant gas supply (>8 TWh) from the Baltic-Finland region to Poland as a result of traders' exploration of new regions for operation.

5.1. **Potential balance and gas adequacy assessment of entry-exit points in the Finnish-Baltic region**

Exit points (Projected annual consumption), TWh/y		**Year**									
		2025	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Including	Latvia	10.2	9.4	9.3	9.3	9.2	9.2	9.1	9.1	9	9
	Remaining region (LT, EE, FIN)	36.3	35.5	35.4	35.3	35.2	35	34.9	34.7	34.7	34.7
TOTAL:		**46.5**	**44.9**	**44.7**	**44.6**	**44.4**	**44.2**	**44**	**43.8**	**43.7**	**43.7**
Entry points (Annual technical capacity), TWh/year											
Including	Inkoo LNG terminal	≤40									
	Hamina LNG terminal	≤2.2									
	Klaipeda LNG terminal	≤39									
	GIPL	≤22.5									
TOTAL:		**≤103.7**									

The table above summarises the region's projected gas consumption volumes and potential supplies for the Baltic-Finland region over the next ten years. In the coming years, gas consumption is expected to recover due to the synchronisation of the Baltic electricity grids with central Europe. Whereas, in the long term, gas consumption is expected to decrease, but natural gas will continue to play an important role in stabilising renewable electricity generation and the share of renewable gases in total gas consumption will increase. At the projected gas supply and consumption levels, the region's gas supply adequacy is assured both in the short and long term.

In 2022 Regulation (EU) 2022/1032 of the European Parliament and of the Council of 29 June 2022 amending Regulations (EU) 2017/1938 and (EC) No. 715/2009 with regard to gas storage entered into force, aiming to prevent the major risks to the security of natural gas supply and the Union economy posed by radical changes in the geopolitical situation and to ensure that storage capacity essential for guaranteeing security of supply does not remain unused in the European Union, thereby ensuring possibility of sharing the storage facilities across the European Union. Commission Implementing Regulation (EU) 2024/2995 of 29 November 2024 setting the filling trajectory with intermediary targets for 2025 for each Member State with underground gas storage facilities on its territory and directly interconnected to its market area ("Regulation 2995/2024") requires Latvia and neighbouring countries to store in Inčukalns UGS a volume of natural gas representing a certain share of the 5-year historical average natural gas consumption.

According to the calculations, the projected filling of Inčukalns UGS in 2025 could reach 60% (with the possibility to fill the storage to the maximum), while maintaining the national strategic reserves. The projected filling rate by 1 November, which is the regulatory maximum capacity time, significantly exceeds the capacity requirements of Regulation 2023/2633 set for the Baltic States.

N-1 calculation

Functioning of the natural gas system in the event of shortage of a single system object has been assessed and prepared according to the Regulation (EU) 2017/1938 of the European Parliament and of the Council[10], which takes into account the N-1 principle, or the failure of a single major natural gas infrastructure. N-1 is a theoretical calculation describing the technical capability of the natural gas infrastructure to meet total demand for natural gas in a given area if the largest natural gas supply infrastructure interconnection is not available on the day with the highest statistical demand in 20 years.

N-1 allows to assess the level of protection of natural gas consumers or the adequacy of natural gas infrastructure capacity in a selected area in percentage terms, taking into account the characteristics of the different elements of the natural gas system. The formula for the N-1 calculation and explanations of the elements to be calculated are available in Annex 1, while the results of the N-1 calculations at different Inčukalns UGS fills are summarised in the table below. The full calculation of N-1 values is available in Annex 2.

Under Regulation (EU) 2017/1938 of the European Parliament and of the Council, the value in both situations exceeds the minimum set by the Regulation. Although the N-1 calculations show that the security of natural gas supply in Latvia is at a high level, it should be noted that the N-1 criterion does not provide information on the overall security of natural gas supply in Latvia as it does not assess the availability of natural gas at the relevant infrastructure entry points. For this purpose, the availability of LNG terminals in Lithuania and Finland and the gas market situation in Estonia, Lithuania and Finland should be assessed.

Conexus points out that compressor station No. 1 and compressor station No. 2 of Inčukalns UGS can be considered as two different infrastructure units, as each compressor station is an individual, complete technological unit, which operates independently of the other one. This is made possible by the variations in technological circuits, the individual geographical locations and the possibilities of operating the technological units. Conexus concludes that, in the event of a malfunction or outage of one of the technological units of Inčukalns UGS, the other technological unit will be able to fully meet Latvia's national demand for natural gas.

5.2. **Results of N-1 calculation depending on Inčukalns UGS filling level**

Filling level of Inčukalns UGS	*N-1 value[11]*
30 %	248%
100 %	258%

[10]Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply

[11]N - 1 ≥ 100 % in accordance with the requirements of the Security of Supply Regulation

6. TRANSMISSION SYSTEM DEVELOPMENT

6.1. Development of the interconnection system

Until 30 May 2022, Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013 laying down European guidelines for energy infrastructure, repealing Decision 1364/2006/EC, amending Regulation (EC) 713/2009, Regulation (EC) 714/2009 and Regulation (EC) 715/2009 identified the Eastern Baltic region as one of the priority corridors of the European Union to connect the gas supply system of the Eastern Baltic region to the common natural gas transmission network of the European Union. In accordance with the aforementioned Regulation, European PCIs were identified, which are eligible for relieved procedures and for funding from the CEF.

6.1 **Project of common interest of natural gas transmission system interconnection development**

Natural gas infrastructure projects implemented by Conexus according to the fifth PCI list published by the European Commission on 19 November 2021[12]: Improvement of Inčukalns underground gas storage[13], the only underground natural gas storage facility in the Baltic States that provides the region with stable natural gas supplies in the winter period. On 15 May 2019, CINEA signed a contract with Conexus for the implementation of the project. The project consists of three main activities: upgrading of surface facilities, rehabilitation of gas wells and upgrading of gas pumping facilities. The project will significantly reduce the dependency between the capacity available for withdrawal and the natural gas stocks in storage facility, which will significantly improve the reliability of natural gas supply in the region, as well as the operational efficiency of the storage facility. This is particularly important for optimal and efficient functioning of the single Baltic-Finnish natural gas market. Realisation of the project will implement also additional environmental protection measures reducing CO2, NOx and other emissions. The deadline for the implementation of the project is on December of 2025.

The fifth PCI list is the last PCI list established under Regulation (EU) 347/2013 of the European Parliament and of the Council of 17 April 2013 laying down European guidelines for energy infrastructure, repealing Decision 1364/2006/EC, amending Regulation (EC) 713/2009, Regulation (EC) 714/2009 and Regulation (EC) 715/2009.

On 30 May 2022, a new Regulation (EU) 2022/869 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure and amending Regulation (EC) 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944 and repealing Regulation (EU) 347/2013, which excludes natural gas projects and establishes new criteria for projects of common interest, focusing on projects in strategic energy infrastructure priority corridors and areas, implementing the development and interoperability of European energy networks and providing connections to such networks, while ensuring climate change mitigation. The Regulation defines priority corridors for electricity, off-grid electricity, hydrogen and electrolysis, as well as smart grids, smart gas grids and cross-border carbon dioxide networks. At the same time, recital 16 of the preamble stresses that the European energy networks action policy should include new and repurposed hydrogen transmission infrastructure and storage complexes.

The European Commission has already prioritised hydrogen production from renewable electricity in its Communication "A Hydrogen Strategy for a Climate Neutral Europe" of 8 July 2020. The phased introduction of hydrogen solutions may also provide an opportunity to reprofile part of the existing natural gas infrastructure[14].

On 18 May 2022, the European Commission adopted the REPower EU Plan[15], which defines the objective of rapidly reducing dependence on Russian fossil fuels through a rapid transition to a clean economy and is based on the "Fit for 55% " proposals.

In line with the Regulation adopted on 30 May 2022, the European Commission plans to approve the new, the sixth, list of PCI[16] with projects to be implemented according to the Regulation on 18 November 2023. According to this list, the Baltic Energy Market Interconnection Plan for Hydrogen (BEMIP Hydrogen) contains project 11.2 Hydrogen Interconnector between Finland, Estonia, Latvia, Lithuania, Poland and Germany (*called - Nordic-Baltic Hydrogen Corridor*).

[12]List V of European common interests. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R0564&qid=1663087079030

[13]Project of common interest No 8.2.4. Improving Inčukalns underground gas storage

[14]European Union website. Available at: https://eur-lex.europa.eu/legal-content/LV/TXT/?uri=CELEX%3A52020DC0301

[15]European Union website. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022DC0230

[16]European Union website. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=PI_COM%3AC%282023%297930&qid=1704358152782

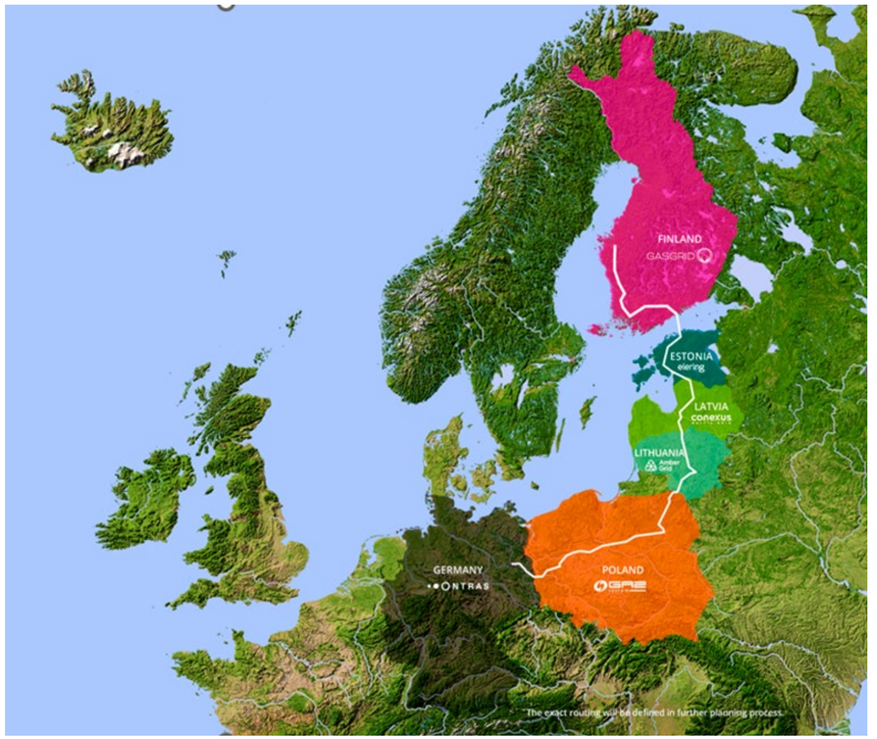
6.2. National system development

Nordic-Baltic Hydrogen Corridor

Regulation (EC) 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005 requires ENTSOG to draw up a 10-year Network Development Plan - TYNDP - every two years. In 2024, ENTSOG started collecting information on the projects to be included in the 2026 TYNDP. Conexus is promoting the Latvian part of the hydrogen interconnector project between Finland, Estonia, Latvia, Lithuania, Poland and Germany or the "Nordic-Baltic Hydrogen Corridor", approved by the European Commission on 29 November 2023, to the 2026 TYNDP.

The Nordic-Baltic Hydrogen Corridor is a joint project of six national transmission system operators (Finland, Estonia, Latvia, Lithuania, Poland, and Germany) - a project jointly implemented by Gasgrid Vetyverkot Oy, a subsidiary company of Gasgrid Finland Oy, Elering AS, Conexus, Amber Grid AB, GAZ SYSTEM S.A. and ONTRAS Gastransport GmbH aiming to establish a cross-border hydrogen gas transmission corridor from Finland to Germany via the Baltic States and Poland. The project is based on the RePower EU Roadmap published by the European Commission on 18 May 2022, as well as the proposals for hydrogen infrastructure development elaborated by the European Hydrogen Backbone[17]. The project was included in the PCI list in 2023, and the transmission operators involved in the project started the first phase of the project development - the feasibility study, which was completed in 2024. Based on the results of the feasibility phase and the recommendations developed, the TSOs decided to proceed with the project study by applying for co-financing for further project study under the programme announced by Connecting Europe Facility in October 2024. At the beginning of 2025, the European Commission announced a grant of 6.8 million EUR to carry out a detailed study of the project in each of the

6.2. **Indicative map of the Nordic-Baltic Hydrogen Corridor project.**



[17]European Hydrogen Backbone. Available at: https://ehb.eu/

countries involved. These studies will focus on a number of key aspects, including the financial and economic analysis of the project, assessment of the environmental and safety issues, the planning of the route and the development of measures necessary for the successful implementation of the project. The study is expected to conclude in 2027.

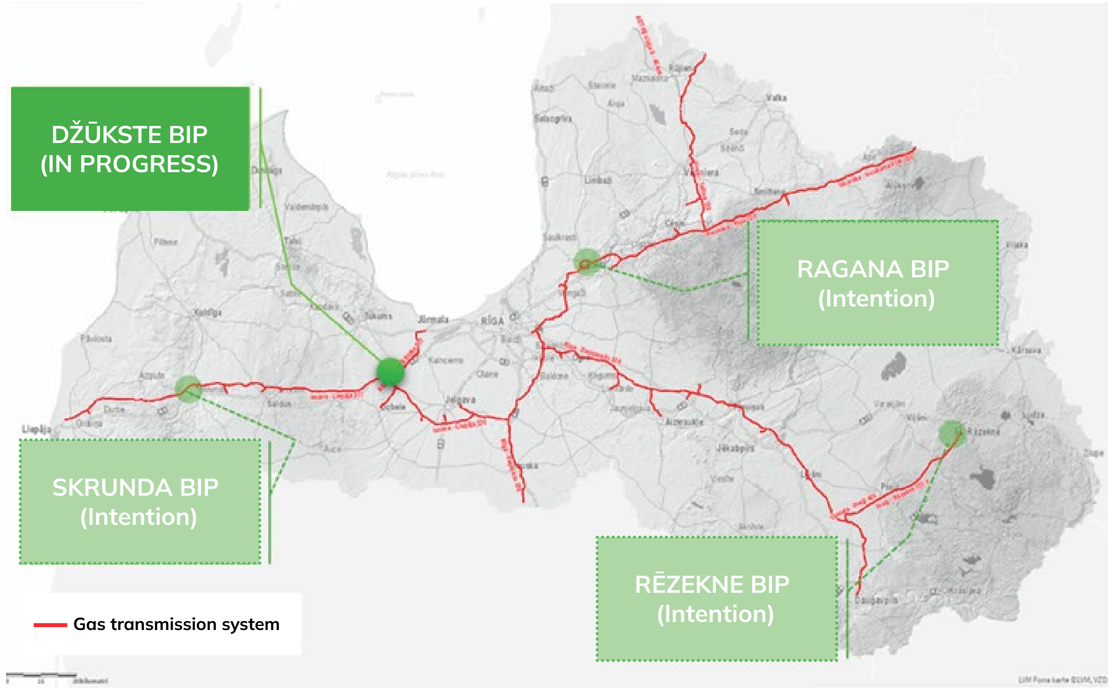
Biomethane injection points

In order to facilitate the integration of biomethane into the system and to enable biomethane producers without a direct connection to the gas infrastructure to inject their biomethane into the natural gas transmission network without having to build connecting pipelines from the biomethane plant to the transmission system, Conexus is implementing the project "Smart Integrated Solutions for Injecting Renewable Gases into the Transmission System".

Conexus, as a part of the project "Smart Integrated Solutions for Renewable Gas Injection into the Transmission System", completed in 2023 the building design in the minimum composition for four biomethane injection points. The most promising location for the pilot project has been identified as a point in Džūkste Parish. The project aims to establish the first regional biomethane injection point and ensure its smart management through the development of appropriate IT solutions.

The project is implemented with the support of the European Union's Recovery Fund. Project Title - "7.1.1.3.i Increasing the share of biomethane in final consumption", Project No. "7.1.1.3.i.0/1/24/I/CFLA/001". Contract for the implementation of the project was signed at the end of 2024. The total

6.3. **Planned locations of biomethane injection points.**



amount planned for the implementation of the project is 1.5 million EUR. Completion of construction of the Džūkste biomethane injection point is scheduled by mid-2025.

In 2024, contract was signed both for the supply of equipment, and for the design, author's supervision and construction of the equipment, and contracts necessary for the development and implementation of information technology solutions. Project implementation is according to the schedule. Development of the remaining points has been commenced and is expected to be completed by 2027.

Guarantees of origin for gas

In 2024, Conexus continues active international cooperation and coordination on both biomethane and hydrogen issues. Already in 2023, Conexus in the accordance with the requirements of the Energy Law, established a system for the issuance, circulation and control of gas guarantees or origin for gas obtained from renewable energy sources. In

the implementation of the system, the requirements of the European Energy Certificate System (EECS), developed by the Association of Issuing Bodies (AIB), were observed. Approval of the domain protocol ensures that the registry is recognised internationally - in the member states of the European Association of Issuing Bodies.

Conexus has ensured both the implementation of the electronic registry for gas guarantees of origin, and the development of the circulation procedure. Upon its approval Conexus obtained full membership status in the gas scheme of the Association of Issuing Bodies (AIB). Membership in the Gas Scheme Group grants voting rights in decision-making processes regarding the development of the European Energy Certificate System and it also enables the issuance of gas guarantees of origin compliant with the European Standard - EECS GO (European Energy Certificate System Guarantee of Origin).

Alongside Conexus, the gas scheme group includes other European gas guarantee of origin issuing bodies including Austria, Belgium (Brussels), the Czech Republic, Estonia, Finland, Italy, Portugal and Spain having implemented the EECS gas standard.

The Latvian gas guarantees of origin registry has 10 account holders registered, along with four biomethane production facilities. A total of 18,123 gas guarantees of origin have been issued, 3,476 have been imported, 3,976 - exported, and 28 guarantees of origin, equivalent to 28 MWh of biomethane have been used.

Connections to the gas system

Cabinet of Ministers Regulation No. 50 of 21 January 2025 "Regulations on Requirements for the Injection of Liquefied Natural Gas in Gaseous State, Gaseous Fuels Produced or Obtained from Renewable Energy Sources and Low-Carbon Gaseous Fuels into the Natural Gas Transmission and Distribution System" lays down requirements for the injection of liquefied natural gas in gaseous state, gaseous fuels produced or obtained from renewable energy sources and low-carbon gaseous fuels, including hydrogen, for injection into the natural gas transmission and distribution system, as well as the quality requirements for the natural gas to be injected into the system[18]. The Regulation specify different oxygen and hydrogen concentrations when gas is injected into a transmission system directly connected to supplies to other countries or Inčukalns Underground Gas Storage Facility or when gas is injected into a natural gas distribution or transmission system not directly connected to supplies to other countries or Inčukalns Underground Gas Storage Facility.

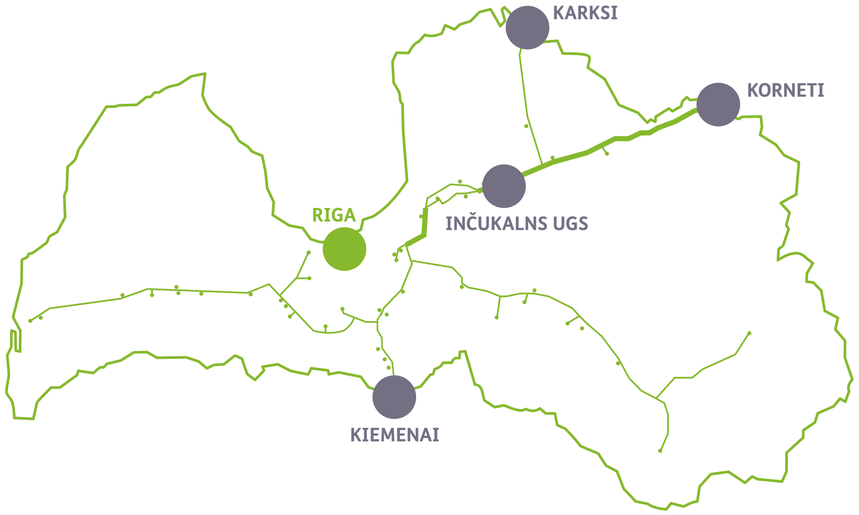
Section 84[1](1) of the Energy Law states that "The regulator shall approve the natural gas transmission system connection regulations developed by the natural gas transmission system operator for natural gas distribution system operators, biomethane producers, liquefied natural gas terminal operators, and natural gas users, and the natural gas distribution system connection regulations developed by the natural gas distribution system operator for biomethane producers, liquefied natural gas terminal operators, and natural gas users". Applications for connections in 2024 were assessed in accordance with the Regulation No. 1/4 "Regulations for connection to the natural gas transmission system for natural gas transmission system operators, biomethane producers, LNG terminal operators and natural gas users", approved by the PUC on 9 March 2023.

Biomethane producers are showing interest in establishing a connection to the transmission system. In 2024, nine technical regulations have been issued for the creation of direct connections to the transmission system and four technical regulations for connections to the distribution system. In 2024, two biomethane producers successfully connected their biomethane plants to the distribution system, where, in accordance with the Energy Law, Conexus ensures the metering and quality control of the injected gas.

[18]Latvijas Vēstnesis / Official Gazette. Available at: https://www.vestnesis.lv/op/2025/15.11

6.3. Assessment of transmission system security at interconnection points

6.4 **Latvia's natural gas transmission system.**



Latvia's natural gas transmission system is connected to the transmission systems of Estonia and Lithuania. The Latvian natural gas transmission system is connected to the Estonian transmission system at two independent points, "Karksi" and "Korneti", and to the Lithuanian transmission system at one point, "Kiemenai".

"Karksi" interconnection

The interconnection provides gas transmission from Inčukalns UGS and Lithuania to Estonian and Finnish consumers, as well as natural gas supplies to Latvian consumers and Lithuania from the Estonian transmission system. In 2024, gas was supplied via interconnection from the Inkoo LNG terminal for injection at Inčukalns UGS, national consumption and onward transmission to Lithuania, as well as in the opposite direction for Estonian gas supply from Inčukalns UGS.

The interconnection is a single pipeline corridor with a nominal diameter of 700 mm, with a single pipeline section of 85.85 km to the interconnection with the dual pipeline system in Latvia. The calculated mathematical probability of an accident for this section is 0.064 times/year. The most significant technical risk of the interconnection is that any repair work will result in the interruption of its operation.

At the end of 2024, the maximum technical capacity in both directions of the interconnection at the "Karksi" point was 116.4 GWh/d. Maximum capacities are provided at a pressure of 50 barg, while the designed maximum permissible pressure in the pipeline is set at 55 barg. In the last two years, 9,667 GWh of energy were transported via the interconnection in the direction of Estonia, with the interconnection operating 381 days or 52% of the total time, while 9,798 GWh of energy were transported via the interconnection in the direction from Estonia to Latvia, with the interconnection operating 294 days or

40% of the total time in the last two years. In total, the transmission capacity of the interconnector was not used for 56 days or 8% of the time in the last two years. Gas flow interruptions in the Latvia-Estonia interconnection are related to the execution of planned repair works to restore the corrosion insulation of the Vireši-Tallinn gas pipeline and to repair pipeline defects detected during internal diagnostics of the pipeline. An analysis of the daily permissible capacities of the interconnection leads to a conclusion that:

- the interconnector with its maximum technical capacity of 116.4 GWh/d s was not used;
- maximum daily capacity reached - 80 GWh/d;
- average load of the interconnector over two years - 16 GWh/d;
- average load from Latvia to Estonia - 18 GWh/d;
- average load from Estonia to Latvia - 14 GWh/d.

Thus, taking into account the fact that, over the last two years, the interconnection has been operating at 80% of its maximum technical capacity only on certain days, with an average capacity of 15%, and based on national and regional natural gas demand forecasts, Conexus has no reason to plan measures to increase the technical capacity of the interconnection or to build new interconnection points in the next five years at this time.

Natural gas quality requirements are harmonised in Estonia and Latvia, including for renewable gases such as biomethane.

"Kiemenai" interconnection point

The interconnection point ensures gas transmission from Inčukalns UGS and Finland/Estonia towards Lithuania, as well as natural gas supply to Latvian consumers for pumping to Inčukalns UGS and to Estonia and Finland from the Lithuanian transmission system, which receives natural gas supplies from GIPL (Polish-Lithuanian interconnection) or from Klaipeda LNG terminal.

The interconnection is a single pipeline corridor with a nominal diameter of 700 mm, with a single pipeline section of 83.79 km to the connection to the dual pipeline system. The calculated mathematical probability of an accident for the section is 0.062 times/year. The most significant technical risk of the interconnection is that any repair work will result in the interruption of its operation.

After the implementation of the enhancement of the Latvia-Lithuania interconnection project, in 2024, technical capacities in the direction from Lithuania to Latvia has been set at 90 GWh/d, and in the direction from Latvia to Lithuania - 82 GWh/d. Maximum capacities are provided at a pressure of 50 barg, while the designed maximum permissible pressure in the pipeline is set at 55 barg.

During the last two years, 4,026 GWh of energy was transported to Lithuania via the interconnection point, and the interconnection point operated for 157 days or 21% of the total time in this direction. In the direction from Lithuania to Latvia, 25,195 GWh of energy were transported through the point in the last two years, and the point operated for 488 days or 67% of the total time in this direction. So, in the last two years, 86 days or 12% of the total time, no capacity was used through the interconnector. The significant gas flows towards Latvia are mainly due to the fact that the Klaipeda LNG terminal was the most important source of gas supplies for consumption in the Baltic-Finland region during this period, as well as the choice of system users to store gas in Inčukalns underground gas storage facility during the gas injection season.

An analysis of the daily permissible capacities of the interconnection point shows that:

- the capacity towards Latvia was set at 90 GWh/d;
- the capacity towards Lithuania was set at 82 GWh/d;
- from Latvia to Lithuania, the maximum capacity reached is 77 GWh/d;
- from Lithuania to Latvia, the maximum capacity reached is 93 GWh/d;
- two-year average load - 39 GWh/d;
- average load from Latvia to Lithuania - 24 GWh/d;
- average load from Lithuania to Latvia 44 GWh/d.

Conexus concludes that the average load of the interconnection point was 39% of the specified technical capacity. Conexus has no reason to plan measures to further increase the capacity of the interconnection in relation to the capacity established in 2024. Taking into account the forecasts of national and regional natural gas consumption for the next decade, Conexus concludes that there is no reason to build a new interconnection between Latvia and Lithuania, while the existing one fully meets the market demand.

Gas quality requirements in Lithuania and Latvia are equivalent for both natural gas and biomethane.

"Korneti" interconnection point

The interconnection is a corridor of two parallel pipelines with a nominal diameter of 700 mm. The interconnector plays a key role in ensuring the storage capacity of the entire Latvian transmission system. The risk of accidents occurring simultaneously in both pipelines is negligible, so there is no need to calculate the mathematical probability of an interconnection accident. Conexus considers that the interconnection from the Vireši - Tallinn gas pipeline branch to the "Korneti" interconnector is an integral part of the transmission system, which ensures the storage capacity of the Latvian natural gas transmission system in order to efficiently organise the technological cycles at Inčukalns UGS. The interconnection will not only provide natural gas to the connected consumers in Latvia and gas supplies to Estonia, but also enable the establishment of a biomethane injection point should demand arise, providing the infrastructure for biomethane entry and placement on the market, while facilitating further development of biomethane production in the north-east. Conexus does not plan major investments in this interconnection in the coming years.

Until 24 February 2022, the interconnection served as the main supply route for natural gas supplies to Latvia and Estonia. After the Russian invasion of Ukraine on 24 February 2022, the use of the interconnection decreased significantly. In accordance with Section 106(4) of the Energy Law, natural gas supplies from the Russian Federation are prohibited, therefore use of the interconnection is linked to the provision of natural gas supplies to Estonian consumers since 2023. At the end of 2022, the maximum technical capacity in the direction of Latvia was 178.5 GWh/d, and in the direction from Latvia to Estonia - 105 GWh/d. Maximum capacities are provided at a pressure of 40 barg. During the previous two years, the interconnection was not in the direction to Latvia. In the direction from Latvia to Estonia, 2.93 GWh of energy was transported through the point in the last two years, and the point operated in this direction for 3 days or 0.4% of the total time. Capacity of the interconnection was not used for 727 days, or 99.6% of the total time, which is the minimum value compared to previous periods. Analysis of the daily permissible capacities of the interconnection point shows that:

- maximum daily capacity reached - 1.1 GWh/d;
- average load from Estonia to Latvia - 0 GWh/d;
- average load from Latvia to Estonia - 0.98 GWh/d.

It is to be concluded that, over the past two years, the interconnection has only been busy for two days. At the moment, Conexus has no reason to plan measures to increase the technical capacity of the interconnector. Given the uncertain geopolitical situation and the ban on natural gas supplies from Russia, Conexus does not plan to build a new interconnection within the corridor in the future.

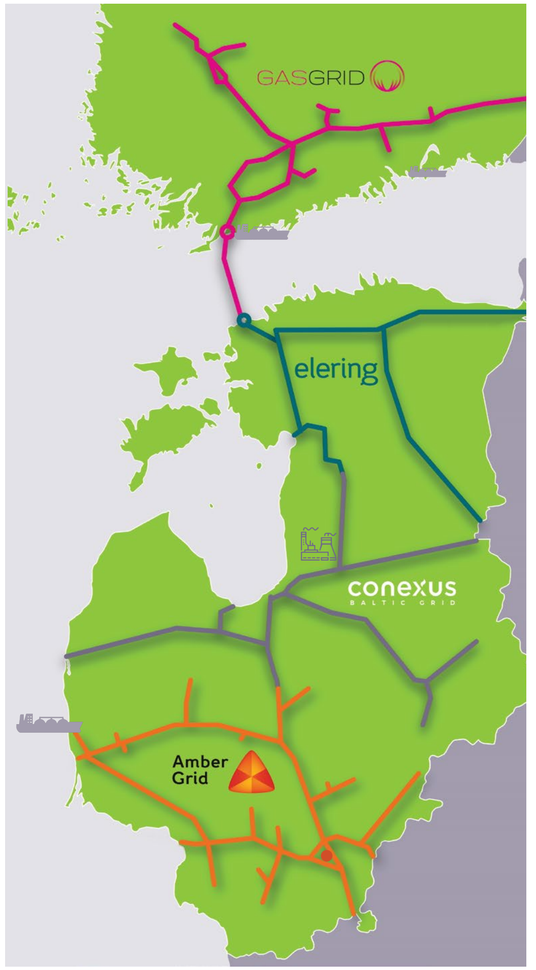
7. REGIONAL GAS MARKET

In 2019, the Regional Gas Market Coordination Group (hereinafter referred to as - RGMCG), consisting of transmission system operators from the Baltic States and Finland, regulators and relevant ministries, reached an agreement on the establishment of an inter-operator compensation mechanism (hereinafter referred to as - ITC). The ITC mechanism provided for uniform tariffs at the external entry points of the Single Market and the abolition of commercial borders between Single Market Member States, including the Estonia-Finland interconnector - Balticconnector. The ITC principles include:

- Revenue pooling, excluding the operator's eligible variable costs of providing the gas flow;
- *Ex ante* revenue distribution among transmission system operators based on forecast national gas demand, which is ex post redistributed based on actual national natural gas consumption.

On 1 January 2020, the Single Market for Natural Gas was launched, bringing together gas transmission system operators in Finland, Latvia and Estonia to create a single entry tariff area (FinEstLat) with two balancing areas - one for Finland and one for Latvia and Estonia. The uniform tariff structure provides for:

- On the external interconnection points of the market - the entry tariff is the same;
- At the internal borders of the Single Market - tariffs are abolished;
- Tariffs at the interconnection point with Inčukalns UGS are discounted by 100%, which significantly contributes to the commercial motivation of storage users to use the storage services, thus also strengthening the security of energy supply in the region;
- Tariffs for national exit points and interconnection points with other TSO are set at national level;
- The tariff-setting process is coordinated regionally.



Key regional market developments and challenges

In 2024, the Russian invasion of Ukraine continued. In 2024, the decision of the Cabinet of Ministers of the Republic of Latvia on announcement of early warning in the natural gas supply sector and the 2022 amendments to Section 106(4) of the Energy Law, which banned natural gas supplies from the Russian Federation, were still in effect. Although the gas supply situation was still challenging in 2024, the natural gas market participants in the Baltic-Finland region successfully coped with the complications and ensured availability of the volumes of natural gas required in the region.

In 2024, Conexus proceeded with its practice, commenced in 2022, of planning and chairing regional operational meetings, which are attended on a weekly basis by representatives of the Lithuanian, Estonian and Finnish natural gas transmission system operators, representatives of the Lithuanian and Finnish LNG terminal operators, and on a monthly basis - by representatives of the Polish transmission system operator. The purpose of the meetings is to promote regional cooperation, improve regional coordination and resolution of issues, enhance the understanding of the parties involved on the gas supply infrastructure in the region, the required technical and natural gas market solutions, and maximise the efficiency of use of each country's gas supply infrastructure for the common benefit of the region - for a secure and reliable gas supply.

Taking into account the existing practice of coordinating repair works and with the aim to further promote regional cooperation and improvement of transparency in the operation of the gas supply system, the Baltic and Finnish natural gas transmission system operators, together with the LNG terminal operators of Lithuania and Finland developed a regional cooperation agreement, which was signed in the first half of 2024. The aim of the agreement is to harmonise the planning process for diagnostic and maintenance works in the short term (until the end of the following calendar year) and to introduce a longer term planning process that will enable the harmonisation and coordination of the timing of diagnostic and maintenance works for up to five years in advance. Coordinated and long-term planning enables operators to plan repairs more accurately and avoid unwanted overlaps in good time.

After assessing the long-standing experience with OBA accruals and management, an assessment of OBA levels and management approach was carried out in 2024 with the aim to ascertain the need for changes in the interconnection agreements with neighbouring gas transmission system operators Elering and Amber Grid. New levels of standardised OBA were identified, as well as changes to the OBA management principles. By applying the new OBA values and management principles, work on drafting and agreeing a new version of the Latvia-Lithuania Interconnection Agreement with the Lithuanian TSO was commenced, which regulates the management of the Kiemenai interconnection point. Following the analysis of the Karksi OBA situation in cooperation with Elering and Gasgrid, drafting a new version of the Latvian-Estonian interconnection agreement is also planned.

On 8 October 2023, the Balticconnector transmission gas pipeline was damaged, resulting in an outage, and the planned diagnostic works in the Vireši-Tallinn transmission gas pipeline had to be postponed until the Balticconnector was restored to operation. Balticconnector was restored to operation on 22 April 2024. Whereas, on 26 January 2024, the electricity cable between Finland and Estonia - Estlink 2 - was damaged, and repairs works were completed on 4 September 2024. Absence of the cable reduced the Baltic region's access to cheaper electricity from the Nordic countries and promoted local generation, which led to increased consumption of natural gas in the region.

A summary of the most important natural gas supply developments in the Baltic-Finland region during the reporting period:

- From 8 October 2023 to 22 April 2024, natural gas supplies to Estonia were available only from Latvia, while natural gas supplies to Finland were secured from supplies at the Inkoo LNG terminal;
- From 10 February to 19 February 2024, internal diagnostics works were carried out on the Riga-Panevėžys gas pipeline in the territory of Latvia;
- From 6 April to 21 April 2024, the Riga-Panevėžys gas pipeline was verified for defects based on diagnostic results;
- From 3 August to 25 August 2024, repair works of the Riga-Panevėžys gas pipeline were carried out;
- In July 2024, repair works of the Vireši-Tallinn gas pipeline were carried out;
- From 1 October 2023 to 19 December 2024, repair works of a section of Izborsk-Inčukalns UGS gas pipeline were carried out;
- From 1 May to 13 June 2024, maintenance works of the Klaipėda LNG terminal were carried out, during which the Klaipėda LNG terminal was not available for regasification.
- From 14 October to 27 October 2024, diagnostics works of the Vireši-Tallinn gas pipeline were carried out on the Latvian side, and, from 4 November to 16 November - on the Estonian side.

In 2024, active preparation works for the transition of the Baltic-Finland region from the UAB GetBaltic exchange to the European Energy Exchange AG exchange, which is scheduled to enter the region in autumn 2025, took place.

Over the next decade, the regional market is expected to continue to integrate, with operators cooperating with each other both to address technical challenges and to develop market mechanisms. Negotiations on Lithuania's accession to the Single Market Area were postponed to at least 2026. Operators in the region will continue joint research and development projects to identify the necessary system improvements, including the construction of new infrastructure and associated costs, to safely inject and transport gaseous renewables, developing the regional renewable energy market.

Natural gas consumption in the region is expected to stabilise, but a gradual decrease is forecast in the long term.

8. CONCLUSIONS OF THE UNIFIED OPERATOR

1. In 2024, natural gas consumption in Latvia increased by 7% compared to 2023, driven by both relatively colder weather conditions and an increase in electricity generation from thermal power plants. While the trend of recent years related to increase in renewable energy generation continues, natural gas consumption may continue to increase slightly in the coming years, playing an important role in balancing electricity generation. Natural gas consumption is expected to fall over the next decade, however, the share of renewable gases in total gas consumption structure will increase.

2. The region's natural gas sources are fully capable of meeting the region's natural gas needs in both the short and the long term. It can be concluded that the region's natural gas market is able to function fully even at challenging moments when the proportion of natural gas flows between supply sources changes.

3. At the end of the 2024 injection season, Inčukalns UGS reached 85% filling level, resulting 4% less compared to a year before, thus still confirming high demand for storage services. The volume of stocks was affected by prolonged maintenance works at the Klaipėda LNG terminal and repair works of the Riga-Panevėžys gas pipeline, therefore, it should be concluded that the flexibility of supply sources and routes, as well as measures promoting the operation of the regional market, can ensure availability of storage even when some infrastructure elements are unavailable.

4. Amendments to the Energy Law, which introduced changes to the regulation of Inčukalns UGS, both strengthen the security of natural gas supply in the region by facilitating the access to the storage for neighbouring countries' energy supply companies for the storage of strategic reserves. At the same time, they allow Conexus to respond promptly to changes in the natural gas market by introducing storage capacity products with suitable terms, aligning them with the long-term capacities reserved by companies at LNG terminals. This promotes more efficient operational planning and greater market predictability in the long term.

5. In 2024, Latvian biomethane producers injected 68 GWh of biomethane into the national natural gas entry-exit system, marking the beginning of the biomethane market's development. This supports not only the achievement of the national decarbonisation goals but also contributes to Latvia's energy independence. Based on the interest of market participants in injecting biomethane into the gas system, Conexus concludes that the volume of domestically produced biomethane will continue to grow in the coming years.

6. There is successful and close cooperation among the region's transmission system operators in the development of the regional renewable energy market, including joint work on the development of a hydrogen transmission system infrastructure, facilitated both by the European Union's project of common interest status and by the European Union co-financing for further studies of the project.

9. ANNEXES

Annex 1

$$N\text{-}1\ [\%] = \frac{EPm + Pm + Sm + LNGm - Im}{Dmax} \times 100, \quad N\text{-}1 \geq 100\%$$

where:

EP_m – Entry Point Technical Capacity (GWh/d), excluding production, storage and LNG capacity (P_m, S_m, and LNG_m, , respectively), means the aggregate technical capacity of all entry points at the border that can supply gas to the calculation area;

P_m – the aggregated maximum technical daily production capacity (GWh/d) of all gas production facilities that can be supplied to the entry points of the calculation area;

S_m – means the aggregated maximum technical daily pumping capacity (GWh/d) of all storage facilities that can be delivered to the entry points of the calculation area, taking into account their respective physical characteristics;

LNG_m – the cumulative daily maximum technical regasification capacity (GWh/d) of all LNG plants in the calculation area;

I_m – Technical capacity (GWh/d) of one of the largest gas infrastructures with the highest supply capacity in the calculation area. Where several infrastructures are connected to a common upstream or downstream gas infrastructure and cannot operate separately (e.g., biomethane producers injecting gas into an interconnected system), they are considered as a single gas infrastructure;

D_{max} – total daily gas demand (GWh/d) calculated in the area of a particularly high gas demand day, which statistically occurs once every twenty years.

Annex 2

N-1 calculation data at 30% filling of Inčukalns UGS

Indicator	Value (GWh/d)
EP_m Pipeline interconnections - Entry capacity: • From Estonia 105 GWh/day • From Lithuania 90 GWh/day	195
P_m	0
S_m • Inčukalns UGS compressor shop No. 1 147 GWh/day • Inčukalns UGS compressor shop No. 2 252 GWh/day	133*
LNG_m	0
I_m	0**
D_{max}	132.55

Note
* Maximum combined capacity limited by the gas collector layer withdrawal capacity
** Actual loss of supply capacity, taking into account the technological capacity to operate the storage at the most productive compressor shop outage

$$N\text{-}1 = \frac{195+0+133+0-0}{132,55} \times 100 = 248\,\%$$

N-1 calculation data at 100 % filling of Inčukalns UGS

Indicator	Value (GWh/d)
EP_m Pipeline interconnections - Entry capacity: • From Estonia 105 GWh/day • From Lithuania 90 GWh/day	195
P_m	0
S_m • Inčukalns UGS compressor shop No. 1 147 GWh/day • Inčukalns UGS compressor shop No. 2 252 GWh/day	279*
LNG_m	0
I_m	132**
D_{max}	132.55

Note
* * Maximum combined capacity limited by the gas collector layer withdrawal capacity
** Actual loss of supply capacity, taking into account the technological capacity to operate the storage at the most productive compressor shop outage

$$N\text{-}1 = \frac{195+0+279+0-132}{132,55} \times 100 = 258\,\%$$