Annual Report on Electricity and Natural Gas Markets of the Republic of Lithuania to the European Commission

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National Energy Regulatory Council

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1. FOREWORD

In 2022, the National Energy Regulatory Council (hereinafter referred to as NERC), as the authority for energy regulation in Lithuania, continued to contribute to decisions concerning the integration into a single European Union (hereinafter referred to as the EU) market and regulation area, ensuring transparent, non-discriminatory and predictable operating conditions within the energy sector, as well as the protection of rights and legitimate interests of consumers.

NERC has approved the investment project of UAB "Energy Cells" for 200 MW of energy storage facilities with a total value of around EUR 100 million. 83.3% of the project's value will be financed by the financial assistance of the EU, while the remaining 16.7% will be financed from the company's own resources and/or borrowings. The project aims to meet the need for an isolated working reserve with secure and autonomous technical means compatible with the energy and national security objectives of the State. The system of energy storage facilities, which will provide Lithuania with an instantaneous reserve of isolated electricity until synchronisation, will be used after the synchronisation for the integration of energy produced from renewable energy sources. NERC recognised AB "Litgrid" 1 MW, 1 MWh the system of energy storage facilities installed on the territory of the 330/110/10 kV Vilnius transformer substation (hereinafter referred to as the TS) and connected to the 10 kV captive switchgear of the Vilnius TS, as an integrated component of the transmission networks, and granted the company the right to own and to develop, operate or manage the system as an integrated component of the electricity network. NERC determined that this 1 MW, 1 MWh system of energy storage facilities can only be used to ensure the safe and reliable operation of electricity transmission and cannot be used for balancing the electricity system or for congestion management.

NERC has prepared a Methodology according to which the network operator will calculate the compensation for consumers for whom the electricity transmission is resumed for a period longer than the period of 6 to 72 hours set out in the Law on Electricity of the Republic of Lithuania (hereinafter referred to as the LE).

Procedures for the supervision of independent electricity suppliers have also been developed as part of the implementation of the LE: In the Description of the Procedure for Assessing the Technological, Financial and Managerial Capacity of Undertakings, NERC has provided guidelines for the management of business risks of an independent electricity supplier, according to which independent electricity suppliers will be required to draw up business risk management plans and submit them to NERC. Independent electricity suppliers are also obliged to inform NERC urgently of any unforeseen or unmanaged risks that may arise and to indicate how these risks will be addressed and resolved.

Two stages (hereinafter referred to as Stage I and Stage II) of electricity market opening (liberalisation) have been successfully implemented, following the adoption of the LE amendments in May 2020, which allow consumers to choose their preferred electricity supplier, 97% (95,069 consumers) of consumers in Stage I, whose actual electricity consumption in the facility is no less than 5,000 kWh per year, and 94% (696,630 consumers) of consumers in Stage II, whose actual electricity consumption in the facility is no less than 1,000 kWh per year, have chosen an independent electricity supplier by 2 May 2023. Due to the unstable electricity price market in 2022, it was decided to extend the deadline for Stage III consumers (consuming less than 1,000 kWh/year) to choose a supplier and conclude a contract until 1 January 2026. In total, 70% (1,208.312 consumers) of consumers had chosen an independent electricity supplier by

2 May 2023 (the total number of consumers in Stages I-III is more than 1.717 million). From 1 January 2021 to 1 January 2026, the monopoly services of the public supplier will be consistently abandoned and conditions for the active operation of electricity suppliers will be created. However, the infrastructural components of the final tariff (monopoly services) will continue to be determined by the regulator, taking into account the requirements of both national and EU legal acts. More attention will have to be paid by the NERC to the supply market: questions such as whether the services are provided to the consumers on a transparent, non-discriminatory basis and whether the suppliers do not abuse their dominant position in the market will have to be addressed. To this end, in 2021, the comparison tool for independent electricity suppliers (hereinafter referred to as the Calculator) was created, which is free for consumers to use and allows them to compare offers from independent suppliers. Following the decisions of the Government of the Republic of Lithuania to apply compensations to consumers in order to cope with the increase in electricity prices, the Calculator has been upgraded in 2022 to reflect the offers of the independent suppliers with the applied compensations, and the upgrades are being carried out in 2023 in order to allow consumers to compare the offers for the variable price contracts for electricity.

Amendments to the Law on Energy from Renewable Sources were adopted in May 2022, approving a new scheme of tenders for the use of the maritime area for the development and operation of renewable energy power plants (hereinafter referred to as Tender), which would organise Tenders for the use of the maritime area for the payment of a development fee for the development of plants, i.e., with no incentives. The Tenders are organised by NERC. To this end, NERC has adopted a Procedure for the Organisation of Tenders and the Granting of Permits to Use Parts of the Maritime Area for the Development and Operation of Renewable Energy Power Plants and has published information on the Tender on 30 March 2023. The announcement of the winner of this Tender is expected in September 2023. The Tender with incentives is expected to be launched on 1 September 2023. The first offshore wind power plants are expected to become operational between 2028 and 2030.

In the natural gas sector, NERC continued its cooperation with the Regional Gas Market Coordination Group (RGMCG) on the common Baltic-Finland natural gas market, with a view to establishing a common price zone for transmission services between Lithuania and the FINESTLAT (Finland, Estonia, Latvia) countries, and the Inter-TSO Compensation Mechanism (ITC). At the end of 2021, the natural gas transmission system operators (hereinafter referred to as the TSOs) of the 4 countries drafted and submitted to the national regulators a draft agreement on a regional gas transmission system entry tariff and Inter-TSO Compensation Mechanism (hereinafter referred to as ITC Agreement) between the TSOs of Finland, Estonia, Latvia and Lithuania. The national regulatory authorities of the countries concerned have examined the submitted ITC Agreement, but have not received sufficient justification from the TSOs that the proposed ITC Agreement ensures that the TSOs' cost recovery arrangements are such as to ensure that the TSOs' revenues are not adversely affected. In this context, in March 2022, the national regulators sent a letter to the TSOs asking them to revise the ITC Agreement so that the ITC ensures that the TSOs' costs are covered. In April 2022, the TSOs submitted a revised ITC Agreement, but by 2022 the changed geopolitical situation had led to fundamental changes in the natural gas market that made the ITC Agreement, which had been developed on the basis of different assumptions about the functioning of the market, no longer relevant to the current situation and could not deliver benefits to all the parties involved. In this regard, on 12 October 2022, the Chairpersons of the Baltic-Finnish national regulatory authorities agreed to

postpone the interconnection of the Baltic-Finnish natural gas market, with a view to interconnection taking place no earlier than October 2024.

With the launch of the Gas Interconnection Poland-Lithuania (GIPL) in May 2022, the Baltic States and Finland are now integrated into the EU's single natural gas market. The GIPL pipeline, together with the Klaipėda Liquefied Natural Gas (hereinafter referred to as LNG) terminal, has become an energy security infrastructure not only for Lithuania but also for Poland and the entire Baltic region. The GIPL has become important not only in terms of security of supply, but also in terms of LNG terminal utilisation, and the maximum utilisation of the LNG terminal reduces the burden of the gas security component. Following a review of the LNG terminal pricing by NERC, a decision has been taken that as of 1 May 2022, the pricing of the LNG terminal will be based on a cost-based tariff, which means that there will no longer be a share of the LNG terminal's in the LNG component (maintenance costs). This decision will result in annual savings of EUR 26 million for the LNG terminal security component.

The Chair of the Council  Renatas Pocius

2. MAIN DEVELOPMENTS IN THE GAS AND ELECTRICITY SECTORS

2.1. Market development and surveillance

- Electricity market

In 2022, the amount of electricity imported into the Lithuanian Power System (hereinafter referred to as the LPS) increased slightly, compared to 2021 and accounted for 87.5% of the country's total electricity demand in 2022 (demand – 12.8 TWh). In 2022, the country generated 4.25 TWh of electricity, imported 11.22 TWh of electricity and exported 2.65 TWh. In 2022, the country's electricity consumption amounted to 12.04 TWh. The total installed capacity of the power plants increased to 4,279 MW in 2022 (3,667 MW in 2021).

Total network investments in 2022 increased compared to the previous year: the investments of the Distribution System Operator (hereinafter referred to as the DSO) amounted to EUR 240.10 million (an increase of 136.18% compared to 2021), while the investments of the TSO for the same period amounted to EUR 34.15 million, which is a decrease of 35.71% from the level of the investments in 2021. The maximum hourly electricity demand (net) in Lithuania in 2022 was 2,137 MWh (3.61% less than in 2021), including 1,883.20 MWh in the distribution network (5.37% less than in 2021).

In 2022, in the electricity sector, NERC regulated 5,279 undertakings. This includes licensed or permit-regulated activities for independent power supply, independent power aggregation, transmission, distribution, public supply and electricity generation, as well as permits for the development of generation capacity. At the end of 2022, the following undertakings were granted the licences issued by the NERC: AB "Litgrid" – electricity TSO, AB "Energijos skirstymo operatorius", AB "Achema", AB "Lifosa", AB "Akmenės cementas", and UAB "Dainavos Elektra" – DSO, UAB "Ignitis" (former UAB "Lietuvos energijos tiekimas"), AB "Lifosa" and AB "Akmenės cementas" – public electricity suppliers. In 2022, 95 undertakings had permits for the independent supply of electricity, of which 20 were engaged in the activity of the independent supply of electricity. 27 April 2023 NERC revoked the authorisations for independent electricity supply activities of 66 undertakings that did not comply with the requirements for independent electricity supply undertakings updated in 2022.

By the end of 2022, 4113 undertakings (natural and legal persons) held permits for the generation of electricity issued by the NERC (excluding prosumers).

Fig. 1. Number of the market participants regulated by NERC in the electricity sector in 2022

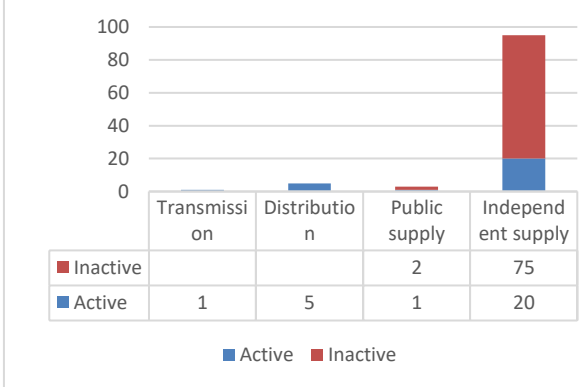
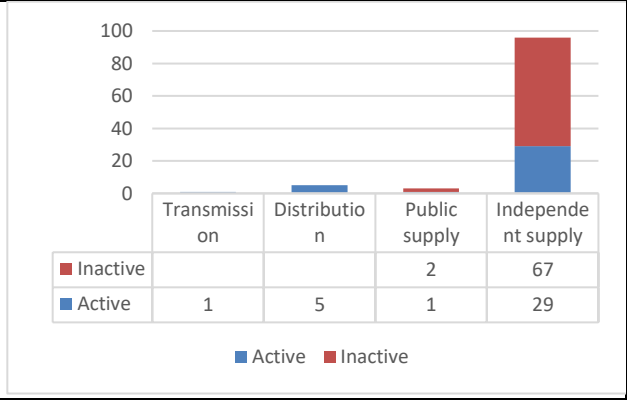
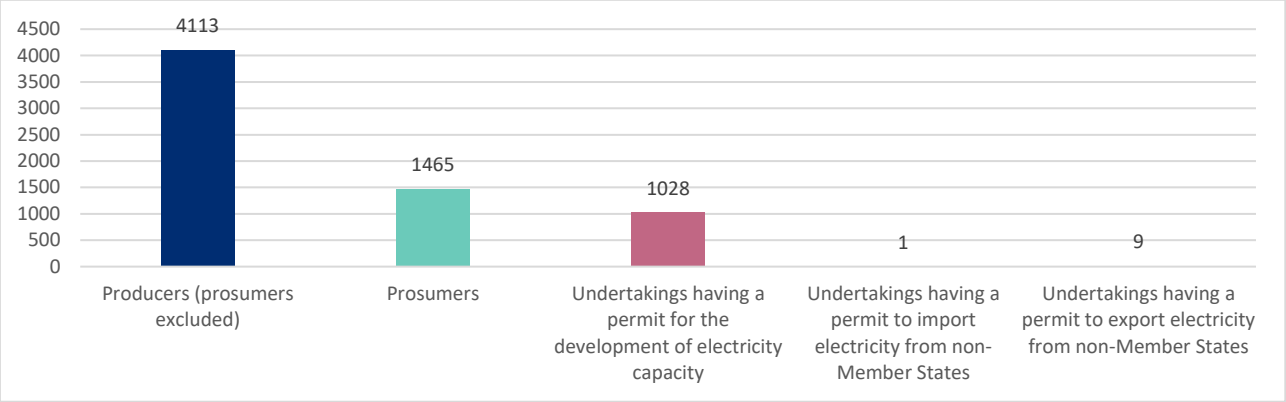


Fig. 2. Number of the market participants regulated by NERC in the electricity sector in 2021



Source: NERC.

Fig. 3. Number of the market participants regulated by NERC in 2022



Source: NERC.

In 2022, 14 permits for the independent supply of electricity were issued.

In 2022, NERC issued 810 permits to carry out activities in the electricity sector, of which 304 were for the generation of electricity and 506 for the development of electricity generation capacity.

When applying for a permit to develop electricity generation capacity, in addition to other mandatory documents, it is necessary to submit a copy of pre-conditions for the connection of the power plant to the power networks issued by the network operator. A NERC permit for the development of electricity generation capacity is not required for prosumers (as of 8 July 2022), and if a person intends to build or install electricity generation capacity with an installed capacity of 100 kW or less.

- Natural gas market

In 2022, the NERC adjusted and specified the legislation that regulates operations of the natural gas sector. The following legal acts have been amended (for more information, see Section 4.1 Network Regulation):

- *The Methodology for Setting of State-Regulated Prices Within the Natural Gas Sector.*
- *Methodology for Determining the Weighted Average Import Price of Natural Gas.*
- *Description of the Procedure for the Administration of the Funds Allocated for the Compensation of the Costs of the Liquefied Natural Gas Terminal, Its Infrastructure, the Installation of the Interconnector, the Fixed Operating Costs and the Reasonable Costs of Supplying the Minimum Quantity of Liquefied Natural Gas to the Designated Supplier.*

The decision on the establishment of a common price area for transmission services between Lithuania and FINESTLAT countries and the ITC mechanism to be applied in 2022 has not been adopted. In this regard, on 12 October 2022, the Chairpersons of the Baltic-Finnish national regulatory authorities agreed to postpone the interconnection of the Baltic-Finnish natural gas market, determining that interconnection could take place no earlier than October 2024.

NERC approved an average 39% increase in AB “Amber Grid” transmission service prices for 2022, applicable from 1 January 2023. In order to ensure competition between sources of natural gas imports, as well as to promote competition between natural gas suppliers and not to create additional market barriers to the use of LNG terminal gas, and taking into account FINESTLAT’s

natural gas transmission pricing decisions, which set uniform natural gas transmission prices at the entry points of the common price area of FINESTLAT, NERC set a cost allocation ratio of 87.36% at the entry points and 12.64% at the exit points. Taking into account that the Klaipėda LNG terminal has become the main source of natural gas imports to Lithuania, NERC removed the discount at the Klaipėda entry point in 2023.

6,946,553 MWh of natural gas was traded on the UAB "GET Baltic" natural gas market in 2022. Compared to the same period in 2021, the volume of natural gas traded on the UAB "GET Baltic" natural gas market was 12.70% less. In 2022, 35,176 GWh of natural gas in the wholesale market of natural gas was sold and (or) consumed, i. e. 47.51% more, compared to 23,846 GWh of natural gas sold and (or) consumed in 2021.

In 2022, natural gas imports amounted to 36,078 GWh, an increase of 37.14% compared to 2021. In 2022, natural gas sales increased by 61.21% compared to 2021, from 22,036 GWh to 35,523 GWh. In the natural gas sector, NERC regulated 55 undertakings in 2022. In the natural gas sector, transmission, distribution, storage, liquefied natural gas (LNG) regasification, supply and market operator activities are licensed or regulated by permits. At the end of 2022, the following undertakings were granted the licences issued by the NERC: AB "Amber Grid" – natural gas TSO, AB "Energijos skirstymo operatorius", UAB "Intergas", UAB „Gren Lietuva", AB agrofirm "Josvainiai", UAB "SG dujos" – natural gas DSO, AB "Klaipėdos nafta" – LNG regasification undertaking, UAB "GET Baltic" – the natural gas market operator. 51 undertakings had permits for the supply of natural gas, of which 35 were operating. In 2022, 16 permits to supply natural gas were issued.

In 2022, the total income within the natural gas sector (transmission, distribution, LNG regasification, supply) amounted to EUR 4,186 million, i.e., almost 4.6 times higher than in 2021 (EUR 913 million), due to the increase in the price of the natural gas product. In 2022, the revenues of DSOs' regulated activities were lower than in 2021, while the revenue of transmission, LNG system operators, and supply undertakings were higher than in 2021. The increase in the revenues of the natural gas supply undertakings was due to an increase in 2022 in the price of imported natural gas/product, which is purchased bilaterally and on exchanges. Total investments in the natural gas sector in 2022 amount to EUR 30.6 million, i.e. EUR 34.3 million or 52.85% less compared to 2021 (EUR 64.9 million). In the transmission activities, significant PCI projects – GIPL and Enhancement of Latvia-Lithuania interconnection (ELLI) – were developed during the period.

2.2. Implementation of the Clean Energy Package

The provisions of Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (hereinafter referred to as the Electricity Directive or Directive (EU) 2019/944) have been transposed into the legislation of the Republic of Lithuania as of 1 January 2022, but most of the sub-legislation has been enacted by 2022. In this section, we present the main decisions regarding the Clean Energy Package.

Description of the Procedures for the Trading of Flexibility Services

The objective is to regulate the procedure for the acquisition of flexibility services by the distribution network operator AB "Energijos skirstymo operatorius" (ESO).

As part of the implementation of the Clean Energy Package, NERC has adopted a Description of the Procedures for the Trading of Flexibility Services, according to which ESO is entitled to purchase and use flexibility services from 1 January 2023.

For the first time, the Description regulates the procedure for the purchase of flexibility services by ESO. Electricity system flexibility services are understood as services provided by electricity market participants that are procured by a distribution network operator in response to the need for flexibility in the electricity networks it operates and in order to ensure the uninterrupted and efficient provision of electricity distribution services.

Electricity system flexibility allows for adjustments in electricity generation and consumption in response to foreseeable or unforeseeable external factors, including changes in the demand and supply of electricity and changes in electricity market prices.

Description of the Procedures for the Marketing of Non-frequency Ancillary Services

The objective is to regulate the procedure for the acquisition of non-frequency ancillary services by the AB "Litgrid" TSO.

The Description of the Procedures for Trading Non-frequency Regulation Services prepared by the TSO was approved in 2022, setting out the specifications for the non-frequency regulation ancillary services necessary for the operation of transmission networks and regulating the acquisition and use of these services.

Under the EU's Clean Energy Package, non-frequency ancillary service means a service used by the operator for steady state voltage control, fast reactive current injections, inertia for local grid stability, short-circuit current, black start capability and island operation capability.

The Description provides for new services to be purchased by the operator as of 1 January 2023: the service of ensuring the isolated operating reserve of the electricity system; the additional service of ensuring the minimum short-circuit current; the additional service of ensuring the system inertia.

Isolated electricity system operation service, consisting of generation availability service and isolated electricity system operation reserve service, will be provided by auction. It also provides that the results of the verification of market participants providing the facility availability service and the isolated electricity system operating reserve service for the stable operation requirement will be valid for five years.

The Description sets out the technical requirements for the ancillary service of voltage management and voltage stability and the technical requirements for the ancillary service of restoring the system after a total breakdown.

Rules for Market Research

The objective is to implement a package of amendments to the LE and related legislation transposing the provisions of the EU Clean Energy Package into national law.

The Market Testing Rules allow NERC to carry out the market testing process smoothly, to ensure that effective competition is ensured in the natural gas and electricity sectors, and to prevent persons with significant market power from abusing their dominant position or otherwise adversely affecting effective competition.

One of the main changes to the legislation is the refinement of the initial list of markets and market segments to include the electricity pooling market.

ACER Decisions on the Implementation of the Clean Energy Package and the Methodology for the Implementation of RCC Tasks

The first major decision taken by the European Union Agency for the Cooperation of Energy Regulators (ACER) to implement the requirements of the Clean Energy Package is the approval of System Operation Regions (SOR) in 2022. In accordance with this decision, the Baltic System Operating Region (Baltic SOR) has been approved. Regional Coordination Centres (hereinafter referred to as RCCs) have been established in accordance with the definition of these operating regions.

In 2021, a joint Baltic decision was reached that the Baltic RCC would be headquartered in Tallinn, with a rotational appointment of the Centre's leaders and an equal number of expert representatives from each country. The Baltic RCC started operating on 1 July 2022.

The tasks of the RCC are set out in the provisions of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereinafter referred to as Regulation 2019/943), which are implemented in accordance with the Methodologies developed by the European Association for the Cooperation of Transmission System Operators (TSO) for Electricity (ENTSO-E) and approved by ACER. During the reporting period, ACER approved three Methodologies for the implementation of these RCC tasks:

- Regarding the RCCs training and certification task, which defines the roles and responsibilities of the RCC training coordinator, the main aspects to be included in the RCC training programmes, the joint training programmes with other RCCs and the qualification requirements for the RCC staff.
- Regarding the RCCs preparation of analyses and reports after grid failures task, which defines the preconditions for the RCC analyses, explains the data collection process, establishes the working procedures of the expert group and the RCC study subgroup, and provides guidance to RCCs on the preparation for the RCC analyses and reports after grid failures.
- Regarding the RCCs assistance to TSOs in optimising settlements between transmission system operators. ACER, in close cooperation with all European national regulators, ENTSO-E and the TSOs, has decided on a Methodology to optimise settlements between TSOs for the redistribution of electricity and for compensatory trading.

Settlements between TSOs are an important element of cross-border trade. This ACER decision aims to ensure that settlements between TSOs are applied efficiently and optimally. This decision is important for all European TSOs, as the optimisation of the settlements between TSOs helps to reduce costs and increases the clarity of the settlement procedure to the benefit of all electricity market participants.

Electricity Price Comparison Tool

The objective is to make it easier to compare prices of independent electricity suppliers and to choose a supplier. In September 2021, NERC launched a new Electricity Price Comparison Calculator for household consumers – a tool that facilitates the process of choosing an independent electricity supplier and provides consumers with more information on electricity tariffs charged by suppliers. The Calculator allows for the comparison of offers from different independent electricity suppliers based on criteria relevant to consumers: the consumer's annual (monthly) electricity consumption, the number of time zones, the demand for renewable energy, the duration of the price lock-in offered in the plan (1–12 months, 13–24 months or price offers of longer than 2 years). The Calculator has been upgraded in 2022 by adding search filters based on supplier name, delivery start date, and contract expiry date. Also, taking into account the compensation applied to the purchase of electricity by household customers, the Calculator has been adapted to show the impact of the compensation on the amount payable for electricity. Once the criteria have been selected, the user is presented with the plans offered by the suppliers, ranked from cheapest to most expensive. The 2023 updates are made to allow consumers to compare variable electricity price contract offers. The Calculator is available on the NERC website https://skaiciuokle.vert.lt/. In 2022, the website was visited more than 800,000 times (more than 1.2 million times since the launch of the Calculator).

The Right of a Network Operator to Own, Develop, Manage or Operate Energy Storage Facilities

NERC has approved a Description of the Procedures and Conditions for Granting of Authorisation for an Electricity Network Operator to Own, Develop, Operate or Manage Energy Storage Facilities, which sets out the general and specific requirements for operators to apply for an authorisation to own, develop, operate or manage energy storage facilities, and to provide information, with two distinct cases: (1) validation of the operator's integrated electricity network component, (2) the tender carried out by the operator. It also sets out guidelines for the conditions and procedures for the tender process, which are binding on operators, which will require operators to carry out a tender process to assess the interest of market participants and to decide whether other persons may not be able to own, develop, operate or manage the energy storage facilities that are necessary for the operators to ensure the efficient, reliable and secure operation of their transmission or distribution system.

Description of the Procedure for the Use of Electricity Networks

NERC has updated the Terms of Reference for the Description of the Procedure for the Use of the Electricity Network in order to ensure that the Description is in line with the provisions of the LE and of Regulation 2019/943 related to the use of the electricity network. In accordance with this Description, operators must transparently disclose the procedures for verifying the technical condition of electricity facilities in the Descriptions of the Procedures for Accessing the Network and the reasons why operators may refuse to connect electricity facilities to the network. Where operators impose restrictions on connection capacity or operation, they shall use the criteria set out in the procedures for the use of electricity networks to ensure that the restrictions are imposed on the basis of transparent and non-discriminatory procedures, to ensure the cost-effectiveness of new connections by network users of newly connected facilities (power stations and storage facilities), and to ensure that they do not create unjustified barriers to access the electricity market.

Methodology for the Setting of Fees for the Connection of Electricity Facilities to Electricity Networks

NERC has updated the Methodology for the Setting of Fees for the Connection of Electricity Facilities to Electricity Networks to include requirements related to the connection of charging access for electric vehicles, energy storage facilities and active consumers to the grid.

3. ELECTRICITY MARKET

3.1. Regulation and technical functioning of the network

- Unbundling of activities

- Article 59(1)(j) of Directive (EU) 2019/944: Cross-subsidisation

In 2022, there were no changes regarding the implementation of the LE provisions related to the unbundling of activities and control of AB "Litgrid" and AB "Energijos skirstymo operatorius"[1]. In accordance with these provisions, NERC controls the effective unbundling of activities in the energy sector, the independence of energy transmission and distribution activities from the commercial interests of energy activities and avoidance of cross-subsidisation. These legal provisions also remain unchanged in 2022. NERC constantly monitor and control the manner in which the electricity TSO and DSO, while conducting their activities, ensure the requirements of independence and unbundling of activities established by Article 54(1) and (3) of the LE by means of the following measures:

1. **Application of the technical task for the verification of regulatory activity reports.** Following the Technical Task of the Verification of Reports on Regulatory Activities, approved by NERC in 2019, the unbundling of regulatory activities and accounting was additionally controlled by independent auditors who carried out detailed audit procedures of performed regulatory activity reports. In 2022, the reports of findings put forward to NERC on the verification of the unbundling of regulatory activities and accounting enforcement, carried out by independent auditors, were submitted to NERC for further evaluation. No significant non-compliance with regulatory activities and accounting unbundling requirements was observed. In 2022, the Technical Task for the Verification of Regulatory Activity Reports was approved (extended) and it will be further used for the verification of reports on regulatory activities provided to NERC in 2023.
2. **Requirement to submit a regular compliance report.** NERC requires DSOs to have a compliance programme developed in accordance with criteria/requirements approved by NERC. Under this programme, the DSO shall report to NERC on the conditions for non-discrimination of electricity network users, non-discriminatory access to and use of electricity distribution networks, the independence of the DSO's activities from the interests of the generation and supply activities, and the measures taken to avoid cross-subsidisation between these activities. The DSO shall make publicly available and submit to NERC an annual report on the compliance programme before 1 May each year.

- Network extension and optimisation

- Article 59(1)(k) of Directive (EU) 2019/944: Investment plans

Supervision of AB "Litgrid" investment plans is carried out in accordance with the conditions set out in the LE. The TSO AB "Litgrid" shall submit a 10-year transmission network development plan to NERC at least every 2 years (by 1 July), which shall include an assessment of the current

[1] In the event of a change of circumstances that would prevent the implementation of the requirements of the unbundling of activities and accounting laid down in Article 54(1) and (3) of the LE, AB "Energijos skirstymo operatorius" shall be obliged to inform NERC no later than within 5 working days from the change in said circumstances. No change in circumstances was recorded in 2022.

and projected electricity supply and demand and the conclusions of a probabilistic assessment of the adequacy of the electricity system. While coordinating the plan, NERC assesses the investments already made by the TSO, adjusts investments previously agreed on but not yet implemented, their deadlines, the cost of the works, etc.

On 1 July 2022, the Lithuanian Power System Development 400-110 kV network plan for the period of 2022–2031 was received. NERC launched a public consultation on the said plan.

Investment in the development and renewal of the electricity transmission network is planned to amount to around EUR 2.03 billion over the period 2022–2031, i.e. 47% more than the amount planned in the 2021–2030 plan for network development and renewal.

During the period of 2022−2031, the majority of investments will aim at the integration of electricity market infrastructure and system management into the European Energy System; up to 75% of the funds required for these works are expected to be obtained with the support of Connecting Europe Facility (CEF), the investments will be also allocated to electricity transmission network projects necessary to increase the energy security and reliability of the electricity system (network development, reconstruction, modernization, major repairs, etc.).

Throughout 2022, AB “Litgrid” made significant progress in implementing PCI projects, as well as other strategic (synchronisation) projects:

- the “Harmony Link” project continues (the link will consist of high-voltage direct-current cable and converter stations: in Darbėnai (on the Lithuanian side) and Žarnovie (on the Polish side)). In 2022, the purchase of the cable and converter station was ongoing;
- the 330 kV Vilnius–Neris Electricity Transmission Line construction project continues. In 2022, design work was in progress;
- the 330 kV Electricity Transmission Line Kruonis PSPP–Bitėnai construction project continues (the new line will be formed by reconstructing the existing 330 kV line Jurbarkas–Bitėnai, constructing a new section of the line and using part of the existing 330 kV line Kruonis PSPP–Sovietskas). In 2022, design works for the first (reconstruction of part of the line from Jurbarkas to Bitėnai, the line will be converted from a single-circuit line to a double-circuit line) and the third (extension of the Bitėnai TS and the connection of the newly formed line) stages, as well as for the construction of the second stage (the construction of a section of a new line), were carried out;
- the 330 kV Electricity Transmission Line Darbėnai–Bitėnai construction project continues (the new line will be formed by reconstructing existing 330 kV lines: Klaipėda–Grobinė, Šyša–Klaipėda, Bitėnai–Šyša and by constructing a new section of 330 kV line). In 2022, the construction works of the first stage (reconstruction of the line section from the Darbėnai substation to the border of Kretinga–Klaipėda districts) and the second stage (reconstruction of the Klaipėda–Grobinė line in the Klaipėda district, the construction of a new section of the line around the Klaipėda city as well as the reconstruction of the sections of the lines Šyša–Klaipėda and Bitėnai–Šyša) were performed;
- the project to install a new synchronous compensators in the Lithuanian electricity system continues. In 2022, design work was in progress; It is the second largest budgeted project after “Harmony Link”. During the project, three synchronous compensators will be installed;
- the construction of the 330 kV switchyard “Mūša” continues. In 2022, design work was in progress;

- the construction of the 330 kV switchyard “Darbėnai” continues. In 2022, design work was in progress;
- in April 2023, a Lithuanian isolated operation test was performed and by the end of 2025, a joint isolated operation test of the Baltic power systems is planned.

In accordance with the Description of the Procedure for the Assessment and Coordination of Investments of Natural Gas, Electricity and Liquefied Petroleum Gas Enterprises, approved by NERC Resolution No O3-100 of 10 July 2009 On the Approval of the Description of the Procedure for the Assessment and Coordination of Investments of Natural Gas, Electricity and Liquefied Petroleum Gas Enterprises, DSO prepares the long-term investment programme of the regulated activity for the regulatory period and submits it to NERC.

Since 2018, the DSO AB “Energijos skirstymo operatorius”, as a DSO serving more than 100,000 consumers, publishes its investment plans on its website in accordance with the obligation laid down in Article 39^1 of the LE. Prior to the publication of the 10-year plan for the development, renewal, modernisation and investments of distribution networks, the DSO conducts transparent and public consultations with competent public authorities and other interested parties. The investment plan for the period of 2021–2030 is currently submitted to NERC for comments. AB “Energijos skirstymo operatorius” expects investment needs for the development and renewal of the electricity distribution network in the period 2021–2030 to amount to around EUR 2.8 billion, i.e. 47% more than in the period 2021–2030 (EUR 1.9 billion). The increase in the volume of planned investments is mainly due to the increase in the cost of contracting works and materials, as well as to the growth in the connection of new customers in the electricity sector. The majority of the investment will go towards improving the resilience and reliability of the electricity network, digitalisation, network development and the integration of renewable energy sources.

- Article 59(1)(l) of Directive (EU) 2019/944: Smart grid development

Every year, AB “Litgrid” implements reconstruction projects for transformer substations and electricity transmission lines, replacing outdated equipment with the latest technologies, measurement, monitoring and control systems. All of this allows for advanced monitoring and management of LPS. Ensuring the supply of electricity to electricity consumers’ facilities, increasing the security of electricity supply, reducing operational and operational management costs, and developing and modernising smart grids allow for more efficient and reliable consumption of energy, as well as increasing market integration of renewable energy sources.

AB “Litgrid” is implementing a Dynamic Line Rating (DLR) pilot project with actual project investments of EUR 119.85 thousand in 2022. DLR technology allows estimating the actual rather than the design capacity of a transmission line by taking into account the environmental conditions, the conductor sags and the actual loads. The installation of this technology improves the assessment of the real performance of the network and avoids capacity constraints from renewable energy sources (hereinafter referred to as RES). Advantages: a low-cost alternative to line reconstruction, inexpensive and simple installation procedure, highest capacity at highest wind generation. Technological sensors are installed in the 110 kV overhead line Palanga–Vėjas 1. Calculation of actual capacity and DLR forecasts based on real-time meteorological and line data for 48 hours ahead. The calculations are updated with new line data at selected intervals (between 3 and 30 minutes).

In 2022, the DSO continued to implement self-healing network (which operates without the involvement of the dispatcher during faults) solutions. In order to expand remote and automated network management (smart network) in 2022 through the installation of remote dispatcher-controlled equipment, 6 unmanaged 10 kV distribution points were reconstructed, where fault location is automated in the Distribution Management System (DMS).

To increase the manageability of the 10 kV network, lines have been reconstructed and remote-control devices have been deployed to ensure that the maximum number of customers disconnected during a single fault using remote control solutions is 600 or less. In 2022, 14 such 10 kV lines have been automated. It is planned to further expand the installation of switching devices in the selected network segments which would, without the intervention of the dispatcher, identify the damaged network section and disconnect (isolate) it, i. e. a so-called FLIR (Fault Location Isolation Restoration) automation programme is being deployed, which is installed on the circuit breakers and triggers the FLIR restoration programme in case of any disconnection of any of the breakers.

In 2021, deployment of an advanced Technological Asset Management System has started. A common information system for the management of technological assets will collect representative data on distribution networks, paving the way for a shift towards active asset and automated management of network maintenance activities. In June 2022, the basic functionality of the Smart Metering Information System was rolled out and the installation of smart metering devices for customers has started. The project work is continuing, with all planned functions to be in place by the end of 2023.

The DataHub project has developed two additional modules during 2022 to allow in the system to manage interruption/upgrades and introduced a new third-party access function to access electricity consumption and generation data.

AB “Energijos skirstymo operatorius” has started mass deployment of smart electricity metering devices for electricity customers from July 2022. According to data provided by ESO, 349,082 smart electricity metering devices have been installed in the period until 11 April 2023. According to the investment plan agreed with NERC on 19 September 2019, smart metering devices are being installed in two stages – by 2025 and by 2037. The installation started with most consuming consumers and business clients (around 1.2 million smart metering devices are expected to be installed by the end of 2025), and then to all other consumers. The metering devices installed during the first stage will account for about 90% of distributed electricity. The company plans to install around 500,000 more smart metering devices by 2023.

- Network tariffs

- Article 59(1)(o) of Directive (EU) 2019/944: Evolution of network tariffs

Tariffs for transmission and distribution services

NERC, in accordance with the provisions of the Law on Energy and the LE, approves the methodologies for the calculation of price caps for the services of electricity transmission, and distribution, sets the price caps for state-regulated services and electricity, and assesses the

prices and tariffs submitted by service providers. It also approves the fees for the connection of the electrical equipment of consumers and producers to electricity networks, the methodology for fees' determination, which also lays down the terms and conditions of the calculation of said fees, in accordance with the general requirements for the setting of fees specified in the LE.
NERC has set a 4.3% lower price cap for the transmission service for 2023, after taking into account the transmission system operator's costs and discrepancies for previous periods. The decrease was due to the approval of the use of congestion management revenues to amortise the increase in the transmission tariff.

Having assessed the costs and historical discrepancies of a DSO with more than 100,000 customers in its service territory, NERC has set an 80.38% increase in the price cap for the medium-voltage electricity distribution service and a 48.29% increase in the price cap for the low-voltage electricity distribution service for 2023. The increase was due to higher electricity acquisition costs for technological purposes and higher operating costs.

The purchase of ancillary services component to the electricity transmission service price (AB "Litgrid") decreased by 86.1% in 2023 compared to the second half of 2022. The price decreases due to the difference between the costs actually incurred in the previous year and the forecast costs set out by NERC, as well as due to the higher electricity volumes forecast by the transmission system operator. The price of these services is set taking into account the price caps for reserve power services, the need for isolated operation of the electricity system and/or prevention or liquidation of major accidents in the electricity system, and the amount of services forecast by the TSO in 2023.

Table 1. *Price caps for the services of electricity transmission and distribution in 2022–2023 (c/kWh)*

Undertaking		**Regulatory period, years**	**First half of 2022**	**Second half of 2022**	**2023**	**Difference, %**
Electricity transmission						
Transmission (AB "Litgrid")		2022–2026	0.684	0.684	0.654	-4.3
Ancillary services purchase component to the electricity transmission service price (AB "Litgrid")		-	0.589	1.723	0.239	-86.1
Electricity distribution						
ESO	*MV*	2022–2026	0.892	0.892	1.609	+80.4
	LV		1.959	1.959	2.905	+48.3
Small distribution network operators						
AB "Achema"		2020–2024	0.570	0.570	1.330	+133.3
AB "Akmenės cementas"	*MV*	2020–2024	0.905	0.905	2.214	+144.6
	LV		1.513	1.513	2.668	+76.3
AB "Lifosa"	*MV*	2020–2024	2.340	2.340	4.850	+107.3
	LV		3.482	3.482	5.950	+70.9
UAB "Dainavos elektra"	*MV*	2020–2024	1.164	1.164	0.866	+60.3
	LV		2.275	2.275	2.786	+22.5

Source: NERC.

Prices for reserve capacity services and isolated operation services

According to the results of the Electricity Reserve Capacity Services Market Research approved by NERC in February 2019, AB “Ignitis gamyba” has been identified as having significant market power in the market for the provision of tertiary active power reserve for voltage management on the 330 kV transmission network and the provision of secondary emergency active power reserve, and AB “ORLEN Lietuva”, AB “Panevėžio energija” and UAB “Kauno termofikacijos elektrinė” were recognised as having significant market power in the market for the provision of tertiary active power reserve for the restoration of secondary emergency active power reserve. Accordingly, the prices of these services are regulated.

The results of the above mentioned research also identified AB “ORLEN Lietuva”, AB “Panevėžio energija” and UAB “Kauno termofikacijos elektrinė” as having significant market power in the market of tertiary active power reserve provision in the event that prior to the commencement of the auction for the tertiary active power reserve provision service, the TSO of the electricity system announces the ordering of additional capacity of electricity producers capable of providing the service of isolated operation of the energy system, and the prices of the isolated operation energy system service are not regulated in accordance with the statutory procedure, or the prices of the isolated operation service are based on full cost recovery of the isolated operation service in accordance with the statutory procedure, and the provision of these services would require the capacity of all the producers capable of providing both the tertiary active power reserve service and the isolated operation service to be provided by these undertakings, the prices of the tertiary active power reserve provision service would become subject to regulatory control. Similarly, under the provisions of the LE, the prices of the isolated electricity system operation service would also be regulated. In 2022, Unit 7 of the Elektrėnai Complex (hereinafter referred to as the EC) operated by “Ignitis gamyba” with a capacity of 260 MW/h and Unit 8 of the EC with a capacity of 259 MW/h provided the TSO with a tertiary active power reserve service. From 2023, this service is no longer ordered. Instead of the tertiary active power reserve service, EC Units 7 and 8, together with the EC Combined Cycle Unit (hereinafter referred to as CCU), provide the TSO with the availability services for electricity generation facilities. In 2023, these services are provided to the following extent: 260 MW for EC Unit 7, 260 MW for EC Unit 8 and 371 MW for CCU. AB “Ignitis gamyba” provides frequency restoration reserve and reactive power and voltage management services with its own managed facilities.

In 2022, the TSO AB “Litgrid” publicly announced that it expects to need 1,118 MW/h of generation availability in 2023 to ensure the operation of the isolated power system. The isolated operation service will require the capacity of all producers capable of providing isolated operation services. AB “Litgrid” also informed that there are no planned volumes of tertiary active power reserve in 2023, so it is planned that the full capacity of EC Unit 7, EC Unit 8 and CCU units will be ordered for the isolated system operation service. Considering the foregoing, NERC has set price caps for 2023 for the service of the secondary emergency active power reserve (frequency restoration reserve) of the Kruonis Pumped Storage Power Plant (hereinafter referred to as PSPP), a unit of AB “Ignitis gamyba”, for the service of the units EC 7, EC 8 and CCU (formerly known as the units of the Lithuanian power plant), as well as for the service of the power plants of AB “Panevėžio Energija”, AB “ORLEN Lietuva”, and UAB “Kauno termofikacijos elektrinė”. NERC also set a revenue cap for the service of prevention of accidents and malfunctions as well as their liquidation to be provided by AB “Ignitis gamyba” with the Kaunas Algirdas Brazauskas Hydro Power Plant and the Kruonis PSPP in 2023. NERC has also set price caps for the isolated electricity system operation service for the facilities of these undertakings: AB “Ignitis gamyba”, AB

"Panevėžio energija", AB "Orlen Lietuva", UAB "Kauno termofikacijos elektrinė" and AB "Achema". In order to ensure equal conditions of competition, the price caps for these services are confidential and shall not be made public.

For the first time, NERC has set the price cap for the isolated electricity system operation reserve service of the designated storage operator UAB "Energy Cells" at EUR 4.78/MW/h (excluding VAT) for 2023.

Table 2. *Volumes of facilities required to ensure the isolated operation of the electricity system for 2023*

Name of the electricity producer	Name of the unit	Capacity, MW
AB "Ignitis gamyba"	B-7	260
AB "Ignitis gamyba"	B-8	260
AB "Ignitis gamyba"	CCU	371
UAB "Kauno termofikacijos elektrinė"	TG-2	104
AB "Panevėžio energija"	G1,2	30
AB "ORLEN Lietuva"	TG-1(TG-2)	73
AB "Achema"	Power plant No 1	20

Source: *NERC.*

Price of the services of public interest (SPI)

NERC determines the need for the SPI funds, the SPI prices and the distribution to SPI providers. The total budget for the SPI in 2022 is set at EUR 52.810 million. The majority of these funds were allocated to the production of energy from renewable sources (hereinafter referred to as energy from RES) – EUR 40.359 million, and to the refunding of SPI funds to eligible consumers for the amount of electricity consumed by them in excess of 1 GWh in the previous calendar year, as set out in Article $74^1(3)$ of the LE (EUR 12.259 million). The planned budget for 2023 is EUR 11.459 million, with the majority of the funds allocated to the generation of RES.

Table 3. *Budget and prices for SPI funds 2021–023*

	2021		2022		2023
	Planned	***Paid***	***Planned***	***Paid***	***Planned***
Total SPI funds, EUR million, of which:	110.53	39.32	52.81	-41.44	11.459
To support the production of energy from RES (including balancing and centralised purchasing), EUR million	95.08	28.95	40.36	-53.77	9.380
Refunds of SPI funds under Article 74^1 of the LE, EUR million	15.17	10.17	12.26	12.10	1.90
SPI price, c/kWh	First half	Second half	First half	Second half	First half
	1.124	1.006	0.321	0	-0.780

Source: *NERC.*

The main reason for the difference between the paid and planned SPI funds is the difference between the forecast average electricity market price and the actual price. Considering that in 2022 the actual market price of electricity was significantly higher than forecasted, the majority of producers not only did not need to use the SPI budget but also received a refund of the difference between the amount of electricity purchased from producers and sold on the exchange at the actual market price and the amount paid to producers for this electricity according to the fixed tariff they were subject to, which led to an adjustment of the SPI price to

0 c/kWh in the second half of 2022 and a negative price in 2023, due to the surplus in the SPI budget.

The price of using networks for prosumers

For the coming year, NERC has set the prices for the electricity network usage service (hereinafter referred to as the Service) for household prosumers producing electricity from renewable energy sources (hereinafter referred to as household prosumers) according to the voltages and the electricity network operator providing the Service, taking into account the costs they incur and the electricity market price. In accordance with the changes in the legal framework as of July 2022, the prices for the Service are set in three options, which were in force in the previous year, and one new option for the billing of the Service, equating the price of the Service to the tariff for the use of the electricity network chosen by the household prosumers. The latter option was introduced for household prosumers only from 1 January 2023. In 2023, the prices of the Service provided by AB "Energijos skirstymo operatorius" were increasing under options I and II, while under option III they were decreasing. The main reasons for the increase in the price of the Service in options I–II are the higher prices set for the distribution service, while in option III the price decreased significantly due to the higher projected electricity market price.

***Table 4**. Comparison of the prices of electricity network usage service of AB "Energijos skirstymo operatorius" for 2023 and 2022*

Options	Units of measurement	2023		2022		Change (%)	
		MV	LV	MV	LV	MV	LV
Option I. Unary, paid per 1 kWh of electricity recovered from the network	EUR/kWh	**0.02**	**0.049**	0.018	0.037	***11***	***32***
Option II. Unary, paid per 1 kW of installed capacity of the power plant	EUR/kWh	**15.91**	**39.11**	11.86	25.01	**34**	**56–57**
	EUR/kWh/month	**1.33**	**3.26**	0.99	2.08		
Option III. Percentage of the amount of electricity used to pay for the use of the electricity network	%	**6**	**12**	21	33	***-71***	***-64***

Source: *NERC.*

Fees for connecting to the electricity networks

Not later than by 30 November of the current calendar year, NERC calculates, approves, and publishes on its website the fees for the connection of consumer equipment and the maximum design prices for the relevant year.

NERC, having assessed the actual costs incurred by AB "Energijos skirstymo operatorius" in connecting consumers to the electricity network, has set tariffs for connecting consumers to the electricity network for 2023. The increase in fees has been influenced by an increase in the cost of contractors' materials.

Table 5. *Fees for the construction of 1 m of electricity network and the installation or enhancement of 1 kW of permissible power (100%*), design preparation fee (when the design is prepared by the operator) and the maximum countervailable design price, EUR excluding VAT*

Consumer group	Fee for the installation or enhancement of 1 kW of permissible electrical equipment power (EUR)			Fee for the construction of 1 m of electricity network (EUR)			Design preparation cost			Maximum design price		
	2022	2023	**Change from target %**	2022	2023	**Change from target %**	2022	2023	**Change from target %**	2022	2023	**Change from target %**
I	28.82	40.48	**40.47**	-	-	**-**	-	-	**-**	-	-	**-**
II	83.06	161.69	**94.66**	34.98	45.29	**29.46**	572.83	743.89	**29.86**	572.83	743.89	**29.86**
III	40.68	83.49	**105.24**	42.66	46.18	**8.26**	654.79	862.1	**31.66**	654.79	862.1	**31.66**
Consumers whose newly connected or increased permissible power is greater than 500 kW	Pays on the basis of the actual price of works									881.59	2,285.10	**159.2**
Consumers whose newly connected or increased permissible power is less than 1 MW	Pays on the basis of the actual price of works									1,981.01	2,992.33	**51.05**

** an equivalent 20% design preparation fee and 80% countervailable design price for socially vulnerable consumers, 50% design preparation fee and 50% countervailable design price for other consumers**.*

*** Other consumers (excluding: (1) vulnerable consumers, (2) consumers, connecting their electrical equipment to the distribution network for the first time which has a permissible power of at least 1 MW or the enhanced permissible power is more than 1 MW, who undertake to distribution network operator not to reduce the permissible power for 10 years from the moment of connecting the electrical equipment to the distribution network as well as (3) consumers, whose the permissible power or the enhanced permissible power of the electrical equipment is more than 250 kW and producers whose electrical equipment to be connected to electricity networks requires the installation of transformer stations, transformer substations, distribution points, and, in specified cases, constructors (customers) who wish to install these electricity networks and organise their installation in accordance with the procedure established by the Ministry of Energy and agreed with the distribution network operator.*

Source: *NERC.*

The fees for the connection of electrical equipment to electricity networks (100%) calculated and approved by NERC, which are applicable for the following consumer groups:

Group I – consumers whose permissible power of connected electrical equipment or increased permissible power of electrical equipment or the total permissible power of electrical equipment is less than 50 kW, and whose equipment does not require the installation, replacement or reconstruction of the operator's electricity equipment, and does not require the preparation of a project for the connection of the consumer's electrical equipment to the electricity network or it is necessary to prepare such design, but it is prepared and coordinated by the consumers; Consumers whose increase in the permissible power of electrical equipment meets the conditions of Consumer Group I shall be classified as Consumer Group II if such consumers have acquired the permissible power of electrical equipment using tariffs of Consumer Group II or III and wish to increase it after less than 3 years after the granting of this permissible power;

Group II – consumers whose permissible power of electrical equipment or increased permissible power of electrical equipment is less than 100 kW (excluding the consumers of Group I);

Group III – consumers whose permissible power of electrical equipment or increased permissible power of electrical equipment ranges between 100 and 500 kW (inclusive).

Tariff for the access to interconnection lines (hereinafter referred to as the AIL)

In accordance with the amendments to the LE that entered into force in March 2014, NERC sets the tariff for AIL, which applies to electricity exports to third countries. In 2022, NERC approved the price of AIL applied for 2023, which amounts to EUR 6.54/MWh, i.e. 4.3% lower than that of 2022 (EUR 6.84/MWh). Relevant information about the price of AIL is published on NERC website www.vert.lt (in English) under the heading "Regarding the price of the service of access to interconnection lines"[2].

- Security and reliability regulation

- Article 59(1)(m) of Directive (EU) 2019/944: Network security and reliability rules

In accordance with the Law on Energy and the LE NERC establishes the requirements for the reliability of electricity transfer and the quality of the services, and controls how they are complied with. In 2022, NERC set a minimum level of transfer reliability for the new regulatory period 2022–2026 for TSO AB "Litgrid" and DSO AB "Energijos skirstymo operatorius", based on the actual average of the transfer reliability indicators, with an improvement target, which is set after assessing the impact on transfer reliability of the investments in the reconstruction and renewal of the electricity networks planned for the regulatory period. This requirement to set an improvement task is foreseen in 2021, following the amendment of the Electricity Transfer Reliability and Quality of Service Requirements laid down in the NERT Resolution No O3-75 of 11 June 2009 On the Approval of the Description of the Electricity Transfer Reliability and Quality of Service Indicators.

The indicators of the reliability of electricity transfer and the quality of the services, as well as their minimum levels, are calculated separately for the electricity transmission system and the distribution network (see Figures below). The lower the value of the indicator, the higher the level of the reliability of electricity transfer.

The reliability of electricity transfer via transmission networks shall be assessed on the basis of two indicators:

the amount of energy not supplied via the transmission network (hereinafter referred to as ENS);

average energy transmission interruption time (hereinafter referred to as AIT).

[2] https://www.vert.lt/en/Pages/regarding-price-of-the-service-of-access-to-interconnection-lines.aspx

Fig. 4. ENS and the minimum level of this indicator, MWh

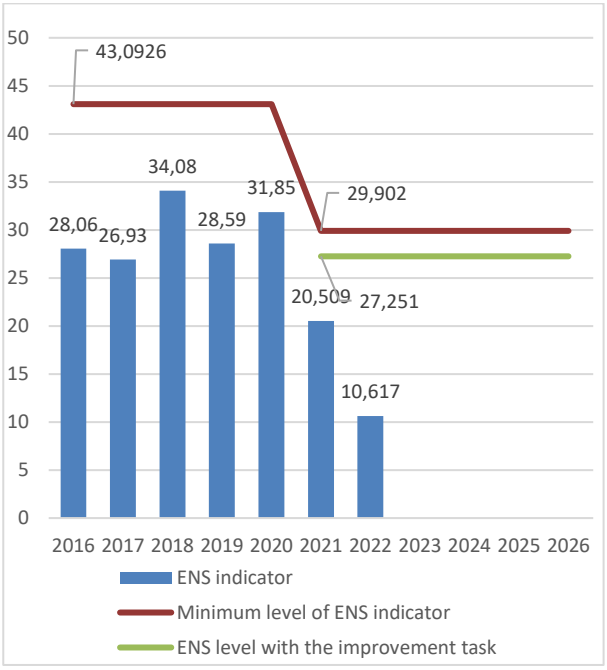
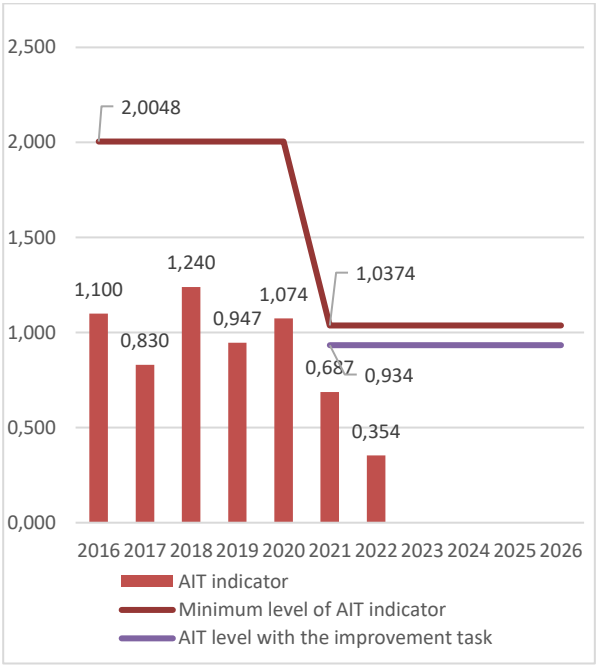


Fig. 5. AIT and the minimum level of this indicator, min



Source: NERC.

The reliability indicators set by NERC for the new regulatory period oblige TSO to ensure that the technical quality of services will be better than or equal to the minimum requirements, i.e. consumers should not have an average electricity interruption duration longer than 0.934 minutes (with the improvement task of 8.9%) and the amount of electricity not transmitted should not exceed 27,251 MWh (with the improvement task of 10%).

In the case of TSO, the actual ENS and AIT transfer reliability indicators in 2022 did not exceed the minimum level set for 2022–2026.

The reliability of electricity transfer via distribution networks is assessed on the basis of two indicators:

System Average Interruption Duration Index (hereinafter referred to as SAIDI);
System Average Interruption Frequency Index (hereinafter referred to as SAIFI).

Fig. 6. SAIDI and the minimum level of this indicator, min per consumer

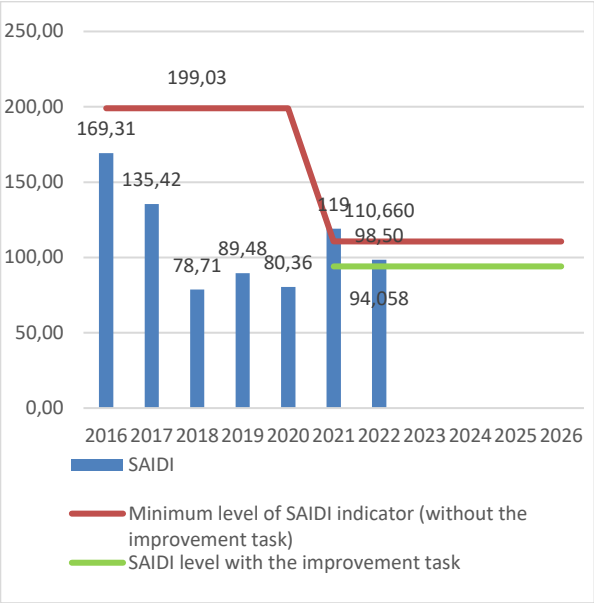
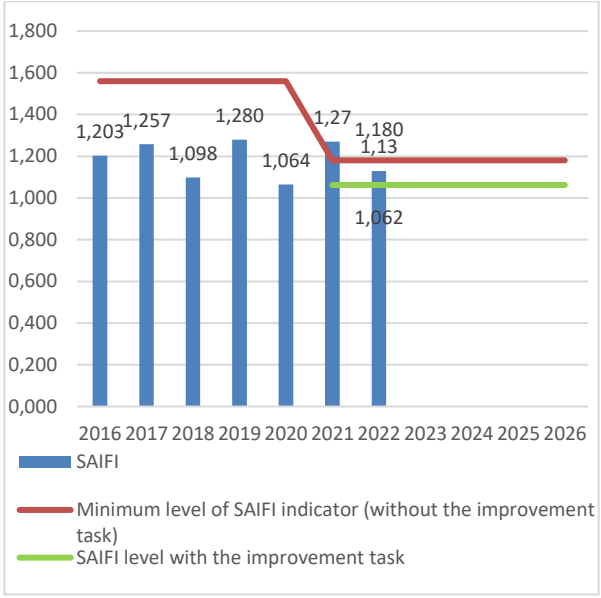


Fig. 7. SAIFI and the minimum level of this indicator, times per consumer



Source: NERC.

The reliability indicators set by NERC for the new regulatory period oblige DSO to ensure that the technical quality of services will be better than or equal to the minimum requirements, i.e. consumers should not have a SAIDI longer than 94.058 minutes (with the improvement task of 15%) per year, the consumer's SAIFI due to the fault of the DSO should not be greater than 1.062 times (with the improvement task of 10%).

Assessing the data for 2022, the initial estimate of the DSO exceeded the SAIFI indicator by 6%, as in Q1 and Q4 2022, the mentioned indicators were negatively affected by the interruptions caused by dangerous winds (the thresholds for natural phenomena were not reached). The reasons behind the exceedance of the SAIDI indicator are still being assessed.

The requirements approved by NERC also establish the indicators of the quality of the services of electricity transfer and distribution. The minimum level of quality indicators shall be at least 95% for each calendar year. The following indicators are established for the providers of distribution services:

- the percentage of customers connected on time (within 25 calendar days of payment of the connection fee), assessing each customer;
- the percentage of electricity transmission renewed on time (within 2 working days) to consumers who have paid their debts during the reporting period;
- the percentage of scheduled interruption information provided to the consumer at the specified time (at least 24 hours in advance) during the reporting period;
- the percentage of scheduled interruption works completed within the time notified to the consumer during the reporting period;
- the percentage of malfunctions resolved on time (within 5 working days) to consumers during the reporting period;
- the percentage of the renewal of electricity transmission on time (reliability category III – no later than 24 hours, II – no later than 2.5 hours, I – as much as necessary for the automatic switching) to consumers in reliability categories I, II and III after an unscheduled interruption during the reporting period;

- the percentage of the complaints of consumers and network users handled on time (within 20 work days) during the reporting period.

Assessing the 2022 data, the time taken by DSO to handle the complaints of consumers and network users was 10 days longer than the requirements set by NERC and amounted to 30 working days.

For the TSO, only one indicator of the quality of the services is set – the percentage of complaints processed in time and, according to the 2022 data, the TSO did not exceed this indicator.

- Article 59(10) of Directive (EU) 2019/944: Congestion management

In accordance with Article 19(5) of Regulation 2019/943, NERC prepares and publishes a report of congestion income for the year 2022 (hereinafter referred to as Report), which is also provided to ACER. The Report is based on data provided by the TSO:

1. Pursuant to Article 19(5)(a) of Regulation 2019/943, information is provided on congestion income generated during the 12 months preceding 31 December of the previous calendar year, i.e. during the period of 01/01/2022–31/12/2022.

Table 6. *Congestion income during the period of 01/01/2022–31/12/2022*

Interconnection	Income generated, EUR
Lithuania–Latvia	12,120,906
Lithuania–Poland	42,097,640
Lithuania–Sweden	213,077,548
In total:	**267,296,094**

Source: NERC.

2. In accordance with Article 19(5)(b) of Regulation 2019/943, information is provided on how congestion income has been used in accordance with Article 19(2), including specific projects and the amount of income transferred to a separate line of the account. In the data, AB "Litgrid" indicated that the revenue was used in accordance with Article 19(2)(a) and (b) of Regulation 2019/943. Table 7 provides detailed information on the use of the generated income during the period of 01/01/2022–31/12/2022.

Table 7. *Use of congestion income generated during the period of 01/01/2022–31/12/2022*

	Used income, EUR
Ensuring the utilisation of allocated capacity in accordance with Article 19(2)(a) of the Regulation	**1,896,071**
Network investments in accordance with Article 19(2)(b) of the Regulation:	**22,991,915**
Construction of 330 kV ETL Kruonis PSPP–Bitėnai	5,314,666
Construction of HARMONY Link	906,298
Construction of 330 kV ETL Darbėnai–Bitėnai	7,639,463
Construction of a new 330 kV ETL Vilnius–Neris	4,765,651
Installation of new synchronous condensers in LPS	2,705,709
Construction of 330 kV switchyard "Mūša"	132,377
Construction of 330 kV switchyard Darbėnai	328,421
Implementation of a frequency stability assessment system (FSAS)	195,613
Implementation of automatic generation management in LPS	1,003,717
Amount used to calculate network tariffs	0

Remaining income transferred to a separate internal account line	**242,408,109**
In total:	**267,296,094**

Source: NERC.

3. In accordance with Article 19(5)(c) of Regulation 2019/943, information on the amount used to calculate network tariffs must be provided.
   Part of the accumulated congestion income (EUR 142.3 million) was used to set the price cap for the transmission service for 2023 – to amortise the increase in the transmission tariff (to cover higher costs in the technological facilities).
4. In accordance with Article 19(5)(d) of Regulation 2019/943, information is provided on the verification of whether the amount referred to in point © has been used in accordance with Regulation 2019/943 and the methodology prepared in accordance with Article 19(3) and (4) of the Regulation 2019/943.
   Congestion income has not been used in accordance with Article 19(5)(c) of Regulation 2019/943, therefore, under Article 19(5)(d) of Regulation 2019/943, no further assessment was carried out.
5. The share of accumulated balance of congestion income (31/12/2022) – EUR 117,982,974 – was added to the account of the UAB "EPSO-G" group (Table 8).

Table 8. *The use of accumulated congestion income*

	Used income, EUR
Accumulated income at the beginning of the period	109,087,029
Accumulated income at the end of the period	351,495,138
Accumulated balance at the end of the period*	350,489,895
In that number, accumulated congestion finance added to the account of UAB "EPSO-G" group – temporarily used to finance the activities of the undertaking	**117,982,974**

* The difference between the balance and accumulated income is due to a mismatch between income (accounts) and revenue/expenses.

- Monitoring of the balance of demand and supply

- Article 59(1)(v) of Directive (EU) 2019/944: Investments in generation and storage capacities related to security of supply

The Elektrėnai Complex (EC) B-8 is scheduled for an overhaul. The overhaul of the 300 MW B-8 will extend its operating capacity to 50,000 hours and ensure uninterrupted power generation for at least 90 days. All overhaul works are scheduled to be completed in January–June 2023, thus ensuring adequate readiness for the synchronisation of LPS with the continental European network and the availability of B-8 in the event of long-term power generation needs. During the isolated operation test organised by the electricity TSO "Litgrid" on 24 April 2023, all interconnections with the Russian-controlled Integrated/Unified Power System (IPS/UPS) – Latvia, Belarus and the Kaliningrad region – were disconnected from the Lithuanian electricity system, leaving the country to operate in the power island mode and to independently manage the frequency of the power island. For the first time in history, all the power units of the Elektrėnai complex operated by "Ignitis gamyba" – B-7, B-8 and the Combined Cycle Unit (CCU) – were in operation during the test. During the test, these power units, together with the Kruonis PSPP and Kaunas HPP hydro units, supplied electricity to consumers and generated more than 65% of the electricity needed for national consumption. In addition, the EC CCU, B-7 and B-8 were involved in the frequency maintenance and restoration processes, using the power range required for regulation in all units. The rest of the electricity needed was supplied by direct-

current connectors with Poland and Sweden, as well as from other power plants operating in Lithuania. The power quality was also ensured by the operation of 2 hydro units in synchronous compensator mode at Kruonis PSPP. The day-long test went smoothly, the frequency remained stable and the electricity supply was uninterrupted, so electricity consumers did not even feel the effects of the test.

NERC recognised AB “Litgrid” 1 MW, 1 MWh energy storage system installed on the territory of the 330/110/10 kV Vilnius TS and connected to the 10 kV own-use switchgear of the Vilnius TS, as an integrated component of the transmission network, and granted the company the right to own and to develop, operate or manage the system as an integrated component of the electricity network. NERC determined that this 1 MW, 1 MWh energy storage system can only be used to ensure the safe and reliable operation of electricity transmission and cannot be used for balancing the electricity system or for congestion management.

NERC has approved the investment project of UAB “Energy Cells” for 200 MW of electricity storage facilities with a total value of around EUR 100 million. 83.3% of the project’s value will be financed by the financial assistance of the ES, while the remaining 16.7% will be financed from the company’s own resources and/or borrowings. The aim of the project is to meet the need for emergency power and frequency reserve with secure and autonomous technical means compatible with the energy and national security objectives of the State. The system of electricity storage facilities, which will provide Lithuania with an instantaneous reserve of isolated electricity until synchronisation, will be used after the synchronisation for the integration of energy produced from renewable energy sources. Testing of the energy storage system started in Q4 2022. The isolated electricity system operation reserve service is planned to be launched in Q2 2023. High-capacity reserve storage units will start supplying power immediately – within 1 second – if needed. This will ensure a reliable supply of active power to the network until other sources of electricity generation come online. Lithuanian power plants currently operating in the IPS/UPS system can start supplying power within 15 minutes. “Energy cells”, the system operator of the energy storage facilities, is committed to providing Lithuania with the service of ensuring isolated electricity system operation reserve until the synchronisation with the Continental European network. Energy storage will subsequently contribute to the integration of energy from RES.

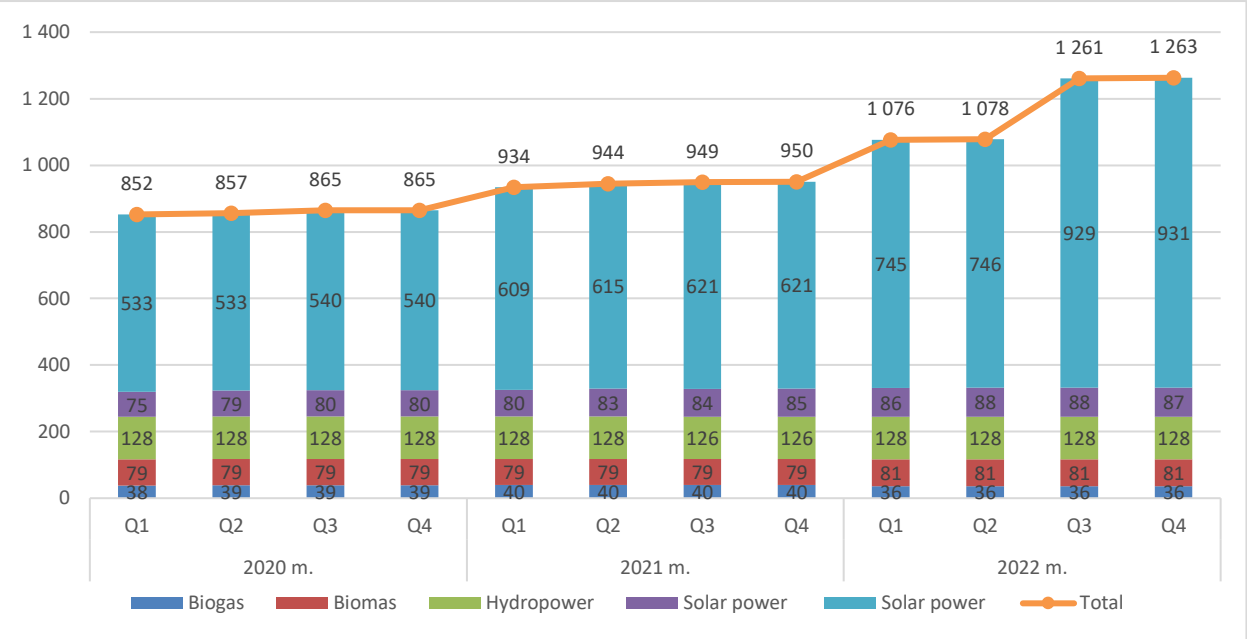
In accordance with the provisions of the LE, NERC monitors and evaluates the implementation of the network development plan. Each year, AB “Litgrid” submits the 10-year plans for electricity network investments, which assess the scenarios for the development of foreseen new sources of generation. In the plan submitted in 2022, it is predicted that by 2031, the installed capacity of electricity-producing sources will amount to 9362 MW. About 78.0% of this number would be made up of power plants using RES.

NERC monitors investments in generation capacity in accordance with the provisions of the LE by issuing permits for the development of electricity generation capacity and for the generation of electricity to persons other than those persons whose installed capacity of the generation equipment does not exceed 100 kW and persons seeking to become prosumers.

In 2022, as in 2021, the largest market share in the overall market structure of the installed capacity of renewable sources was held by wind power plants – 73.7%, hydroelectric power

plants – 10.1%, solar power plants[3] – 6.9%, biomass power plants – 6.4%, and biogas power plants – 2.9%.

Fig. 8. RES structure according to installed power in 2020–2022, MW



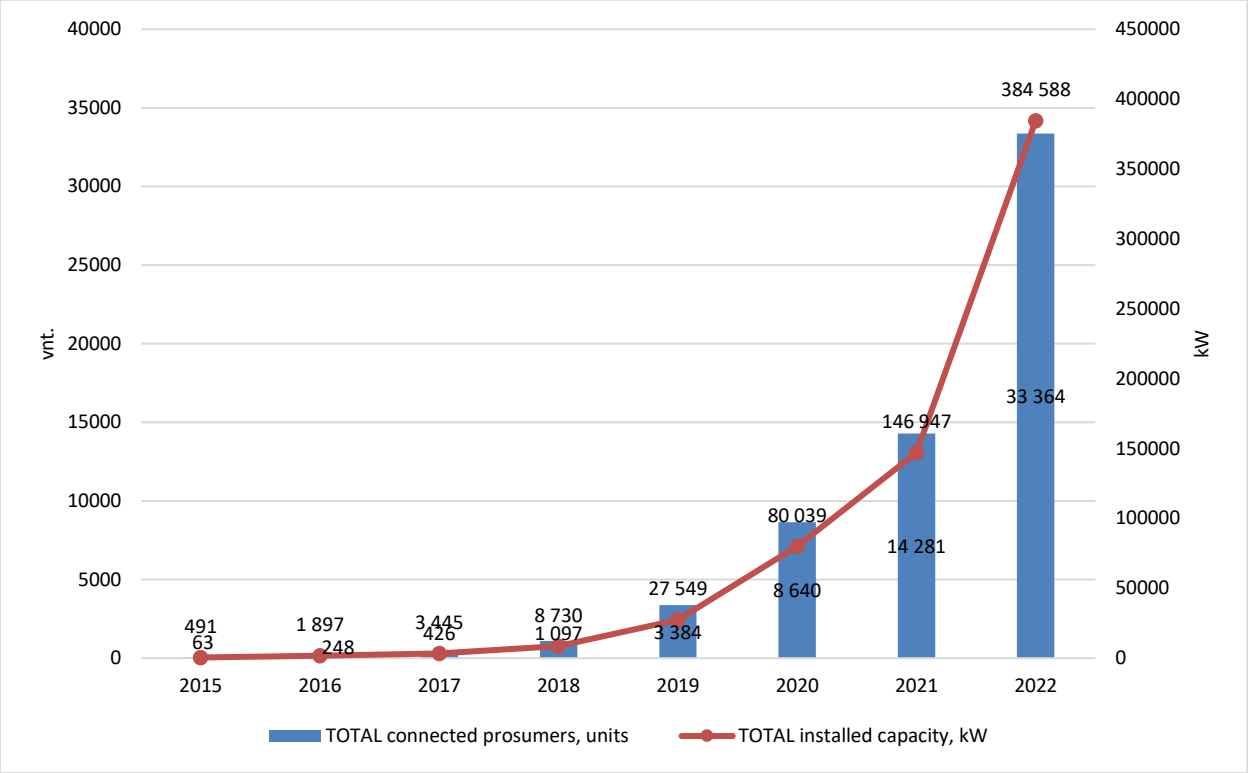
Source: *NERC.*

In 2022, the share of the installed capacity of the RES power plants (excluding prosumers) in the overall balance of installed power amounted to 32.9%.

In accordance with the provisions of the Law on Energy from Renewable Sources, the electricity network operator provides monthly information to NERC on the connection conditions issued to prosumers and persons seeking to become prosumers and intending to construct or install power plants using renewable sources, for which, in accordance with the procedure established in the LE, a permit for the development of electricity generation capacity is not required in.

[3] Excluding the solar power plants managed by prosumers.

Fig. 9. Number of prosumers and the total installed capacity of power plants



Source: *NERC.*

The number of prosumers increased by 19,083 in 2022, with an installed capacity of 237,641 MW (in 2021, the number of prosumers increased by 5,641, with an installed capacity of 66,908 MW). At the end of 2022, the total number of prosumers was 33,364 with an installed capacity of 384.588 MW (14,281 prosumers at the end of 2021 with an installed capacity of 146.947 MW).

- Cross-border issues

- Article 59(1)(w) of Directive (EU) 2019/944: Technical cooperation between transmission system operators of the EU and third countries

In 2022, the existing level of technical cooperation with the operators from third countries, which is essential when seeking to ensure reliable operation and high quality of electricity of the LPS and to prepare for the desynchronisation from the UPS/IPS system in a timely and appropriate manner, continued to be maintained.

In accordance with the official referral and proposal of the European Commission, the issues of desynchronisation from the UPS/IPS system are discussed in the BRELL (Belarus, Russia, Estonia, Lithuania, Latvia) Committee and the Operational Planning and Management Working Group, where TSOs present information on the current situation of system development. The Committee meets twice a year, while the working groups meet as required.

31 January 2022 NERC updated the Methodology on Cross-Zonal Capacity Calculation and Allocation with Third Countries, which detailed the technical traffic volumes based on the actual network situation and line disconnections, updating the distribution of traffic daily. As of 3 March 2022, due to the extreme geopolitical situation, the Baltic operators have agreed to limit trading from third countries to 300 MW (150 MW via the Lithuania-Russia interconnectors and 150 MW

via the Latvia–Russia interconnectors) in order to ensure the frequency stability of the Baltic energy systems. When Nord Pool, the operator of the electricity exchange, stopped trading of Russian electricity in May 2022, imports of Russian electricity in Lithuania were halted, and the country's needs are met by domestic power plants and imports through interconnectors with Sweden, Poland and Latvia.

- Implementation of network codes and guidelines

NERC is a member of the ACER Board of Regulators (BoR), in which approves joint documents on the EU energy market together with other regulators. As part of this activity, NERC contributed to other important decisions related to the Clean Energy Package and EU regulations (network codes and guidelines) in 2022. ACER has adopted 17 pieces of legislation on this topic at the EU level in 2022, some of which were contributed by NERC. Accordingly, the adoption of 4 more pieces of legislation received in 2022 continued into early 2023. In this section, we present the most relevant solutions for Lithuania.

- Article 59(7) of Directive (EU) 2019/944: Network codes

- Demand connection
- Requirements for generators
- High-voltage direct current connections

NERC has approved the proposal submitted by the TSO to modify the general requirements of the updated generation modules. These requirements implement Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators.

The amendments reduce the active power requirements for Type D generators, with active power requirements set at 10% of maximum capacity (Pmax).

The mitigation of the requirements for electricity generators allows for faster development and integration of electricity generated by renewable energy sources into Lithuania's electricity system and the achievement of the national strategic goals in the fields of energy.

Implementing the requirements of the Regulations 2016/631, 2016/1447, and 2016/1388, NERC has already approved the General Requirements of the Technical Connection. NERC regularly monitors the implementation of these requirements and advises market participants on these issues. The general technical requirements will ensure fair conditions of competition for all market participants, as well as security of the electricity system while integrating electricity produced from renewable sources, and will also facilitate the trading of electricity throughout the EU by adopting effective measures.

- Operation

During the reporting year, NERC has not made any decisions related to the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.

- Resolution of accidents and restoration of operation

During the reporting year, NERC has not made any decisions related to the Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration.

- Allocation of forward capacity

In 2022, ACER updated two decisions related to the allocation of long-term transmission capacity: a document on Requirements for the Single Allocation Platform and a methodology[4] for sharing costs of the establishing, developing and operating the Single Allocation Platform;
congestion income distribution methodology[5].

In the future, these methodologies will contribute to the creation of more efficient financial derivatives in the electricity sector and will help market participants hedge the risks arising from fluctuations in wholesale electricity prices. It is worth noting that no such products are sold in Lithuania at the moment.

- Capacity allocation and congestion management

In early 2023, ACER published two decisions[6] on the maximum price adjustment mechanism for the day-ahead and intraday markets (HMMCP).

These methodologies are designed to regulate the highest possible exchange price. Currently, it is EUR 4,000/MWh. Under the former methodology, criteria were established, upon fulfilment of which price was increased (e.g. from EUR 4,000/MWh to EUR 4,500/MWh). The newly approved methodology foresees updated criteria, based on which the increase in prices will be made relying on more objective criteria and it should be executed less frequently. The overall effect of these amendments will be a more moderate adjustment of the short-term electricity market price limits, effectively limiting the cascading effect of price increase due to repeated extreme prices resulting from the current methodology, while conserving the benefits of timely adjustments of the price limits on the efficiency of the European spot markets.

[4]https://www.acer.europa.eu/Individual%20Decisions/ACER%20Decision%2009-2022%20on%20amendments%20to%20SAP.pdf
[5]https://www.acer.europa.eu/Individual%20Decisions/ACER%20Decision%2010-2022%20on%20amendments%20to%20CIDM.pdf
[6] https://www.vert.lt/en/Pages/Updates/2023/acer-approves-the-new-automatic-maximum-price-limit-adjustment-mechanism-for-the-european-electricity-spot-markets.aspx

- Electricity balancing

ACER has decided to approve a proposal by TSO to modify the commonly applied Methodology for the Energy Balancing Price and Cross-Border Capacity Exchange in the European electricity markets.

ACER's methodology includes a temporary price cap of EUR 15,000/MWh for the first four operation years of the European balancing platforms (MARI and PICCASO) until July 2026. The transitional price caps provide protection for the first year of operation of the European balancing platforms. It is a temporal measure to mitigate the potential risks of launching European balancing platforms and to allow TSOs and other market participants to gain experience in their operation.

ACER also approved the amendments to the implementation framework and the procedure for the allocation of imbalances of the European balancing platforms (MARI and PICCASO). These amendments were proposed by all TSOs. The implementation framework of the European balancing platforms foresees rules for inter-system balancing energy exchange through manual Frequency Restoration Reserves (mFRR) and automatic (aFRR) and the allocation of imbalances. The main objective of the amendments – a creation of a new entity in the balancing markets, which would perform the capacity coordination and management function. The change to the implementation structure of the mFRR platform also includes technical aspects, such as clarifications on the evaluation of complex proposals and the demand for mFRR.

The implemented decisions and the created balancing platforms will promote liquidity in balancing markets, reduce the balancing energy costs at the European level using the cheapest resources and will contribute to system security. In the past, by acknowledging the request of the TSOs, NERC has granted an exemption, based on which the deadline for connection to these platforms was postponed and TSOs will connect to MARI along with the TSOs of the Nordic countries no later than 24 July 2024.

3.2. Promotion of competition and market functioning

3.2.1. Wholesale market

- Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

- Article 59(1)(n) and (o) of Directive (EU) 2019/944

In order to ensure that the regulator can ascertain the reasonableness of the costs of undertakings, when assigning them to regulated activities, since 2019, the auditors inspect the reports, submitted to NERC by the undertakings, following the technical task, i.e., specific requirements, approved by NERC. The terms of the technical task may be reviewed annually: by adjusting the requirements or keeping the existing task. In 2022, NERC has revised the technical task of regulated activity verification, i.e. the revised requirements for the verification/audit of the activity reports of regulated companies for 2022 are applied compared to the previous year. In order to ease the administrative burden, electricity and natural gas DSOs serving less than 100 thousand consumers, LPG companies, as well as electricity companies recognised as having

significant market power in the provision of reserve replacement service and/or providing an isolated operation service of the electricity system at a price regulated by the State and complying with other provisions of NERC, may choose the technical task for the verification of regulated activity reports in 2022 – the technical task applicable to all regulated undertakings or the separate Technical Task for the Verification of Regulatory Activity Reports of Electricity and Natural Gas Undertakings, approved in September 2020.

In the electricity sector, NERC regulates prices for 12 undertakings. In 2022, NERC set price caps for the new regulatory period for two infrastructure companies (AB "Energijos skirstymo operatorius", AB "Litgrid") and adjusted the price caps for 4 infrastructure companies (AB "Achema", AB "Lifosa", UAB "Dainavos elektra", AB "Akmenės cementas") as well as for 1 public electricity supply company (UAB "Ignitis"). It also set the prices of reserve power provision and isolated operation of the electricity system for the undertakings providing these services (AB "Achema", AB "Ignitis gamyba", AB "Panevėžio energija", AB "Orlen Lietuva", UAB "Kauno termofikacijos elektrinė") and the price of the isolated operation of the electricity system reserve service for UAB "Energy Cells".

In accordance with the provisions of the LE, NERC continuously monitors and controls the compliance of electricity market participants with the requirements of transparency, non-discrimination, and competition in the energy sector, their compliance with the conditions and requirements for licensed activities or permit regulated activities, the protection, and defence of consumer rights, and legitimate interests, including the reliability of the information provided to consumers. Entities operating in the wholesale electricity market shall make the information, established in separate legislation, publicly available. In accordance with the approved description of the information to be made publicly available, NERC publishes the list of the information published by the entities of the electricity sector[7] (hereinafter referred to as the List) on NERC website. In accordance with the aforementioned description, NERC also annually checks the manner in which the information contained in the List is made publicly available by the entities. Having identified deficiencies in the published information, NERC draws up recommendations related to compliance with the prices of the services within the energy sector with the requirements of transparency, non-discrimination, and other requirements set out in legislation. In accordance with the provisions of the Law on Energy, these recommendations are published at least once every 5 years and submitted to the Competition Council of the Republic of Lithuania. The new recommendations are expected to be published in 2023.

In order to carry out the monitoring of the market, NERC, in accordance with the Rules on the Provision of Information by Energy, Drinking Water Supply and Wastewater Management, and Surface Wastewater Management Undertakings, approved by NERC, collects information from undertakings that are subject to licences, permits and certificates and/or state-regulated prices. On the basis of the information submitted by undertakings, in order to enhance the awareness of market participants and ensure that the market participants have access to reliable information, NERC regularly draws up half-yearly reports on the monitoring of the electricity market and publishes them on NERC website[8].

The level of transparency related to wholesale prices is monitored in accordance with the provisions of Regulation (EU) No 1227/2011 of the European Parliament and of the Council of

[7] https://www.regula.lt/elektra/Puslapiai/elektros-energetikos-sektoriaus-ukio-subjektu-viesai-skelbiamos-informacijos-sarasas.aspx

[8] https://www.vert.lt/elektra/Puslapiai/elektros-rinkos-apzvalga/rinkos-stebesena.aspx

25 October 2011 on wholesale energy market integrity and transparency (REMIT). In addition, NERC, in accordance with the Rules on the Supervision of Trading in Electricity and Natural Gas[9], approved by NERC, has established limits on the disclosure of information that is considered to be publicly unavailable.

The supervision of trade in the electricity market is carried out by analysing the behaviour of market participants, i.e. conditions of entering into transactions, including submission of orders to trade, explanations of market participants and other circumstances, in order to ensure that wholesale electricity markets are not abused. When implementing REMIT, NERC together with ACER carried out continuous surveillance of the wholesale electricity and natural gas markets, analysis of information published on platforms for the disclosure of publicly unavailable information in the Lithuanian bidding zone (in the gas and electricity sector, there were 9 incorrectly/inaccurately published Urgent Market Messages (UMM)).

In 2022, 4 notifications of possible breaches of the electricity market participation rules were received through ACER's Infringement Notification Platform. NERC does not publish further information on ongoing REMIT research as the progress and interim results are confidential.
NERC also carried out the registration of market participants (10 market participants were registered), assessment of bilateral contracts on wholesale energy products and their compliance with the requirements of REMIT, and monitoring of orders and transactions submitted on the exchanges by market participants.

In order to create the preconditions for the development of effective competition within the electricity markets and prevent the abuse of significant influence of persons within the electricity markets, NERC conducts market research in accordance with the Rules for Market Research. Accordingly, NERC regularly publishes market research reports on its website and updates said reports, with the exception of information that is considered confidential, as well as publishes and updates the final decisions on the market research results or parts thereof without confidential information. It should be noted that no market research was carried out in 2022.

It should be noted that at least once in each half-year, the meetings of the National Committee for the Development of the Baltic Single Electricity Market, which is attended by the representatives of state institutions, market participants and related associations, take place. In these meetings, relevant information is exchanged, and problematic issues are discussed while clarifying their causes, and the steps to be taken to achieve efficient operation and development of the electricity market.

NERC is actively involved in the creation of a common regional electricity market, including the development and implementation of various common legislation.

The harmonisation of rules between different EU countries should have a significant impact on the promotion of competition and the functioning of the market. The relevant implemented measures related to the implementation of the network codes are provided in the above section titled "Implementation of the network codes and guidelines".

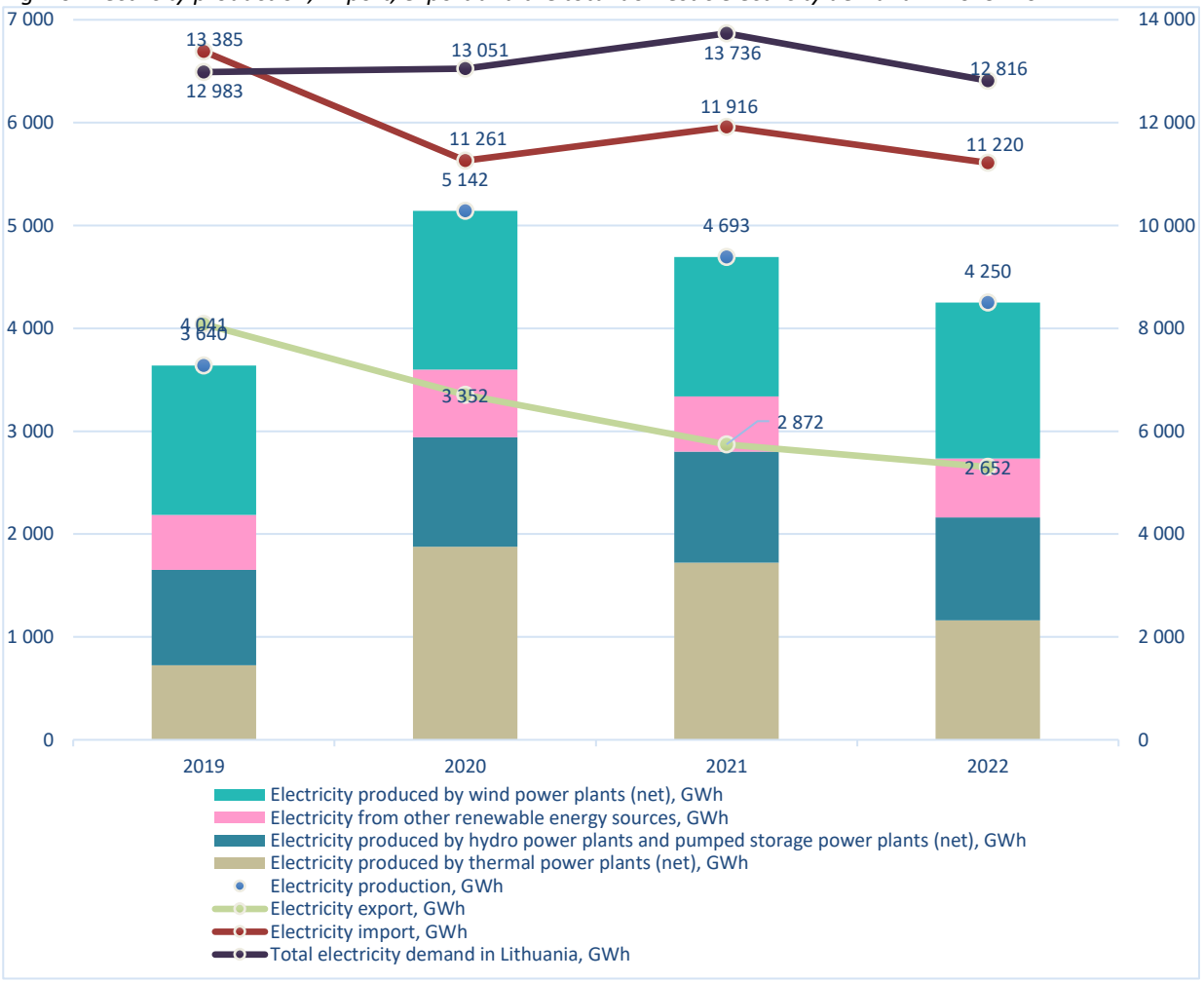
As in previous years, NERC, in order to achieve transparency, and enhance the awareness of market participants and consumers, published all the information related to its activities on its

[9] https://www.e-tar.lt/portal/lt/legalAct/fbc3b880c84711e69dec860c1f4a5372/asr

website: said information included news, various clarifications, statistical information, information on ongoing meetings, public hearing material, etc.

Information on the country's total electricity demand, the amount of electricity produced in the country (net), and the amount of imported and exported electricity is provided in Figure 10.

Fig. 10. Electricity production, import, export and the total domestic electricity demand in 2019–2022



Source: *NERC.*

In 2022, the electricity price in the Lithuanian price zone, on the day-ahead market amounted to EUR 230.23/MWh. 87.5% of the total electricity demand in the country was imported. Further information is available at www.nordpoolgroup.com.

In 2022, the sales of electricity on the electricity wholesale market were carried out by 19 suppliers, while the purchases were performed by 24 suppliers.

In 2022, there were 4 main suppliers in the wholesale electricity market: UAB "Ignitis", AB "INTER RAO Lietuva", Axpo Nordic AS, Eesti Energia AS. Taken together, these suppliers accounted for 93.8% of total electricity sales on the electricity exchange in 2022.

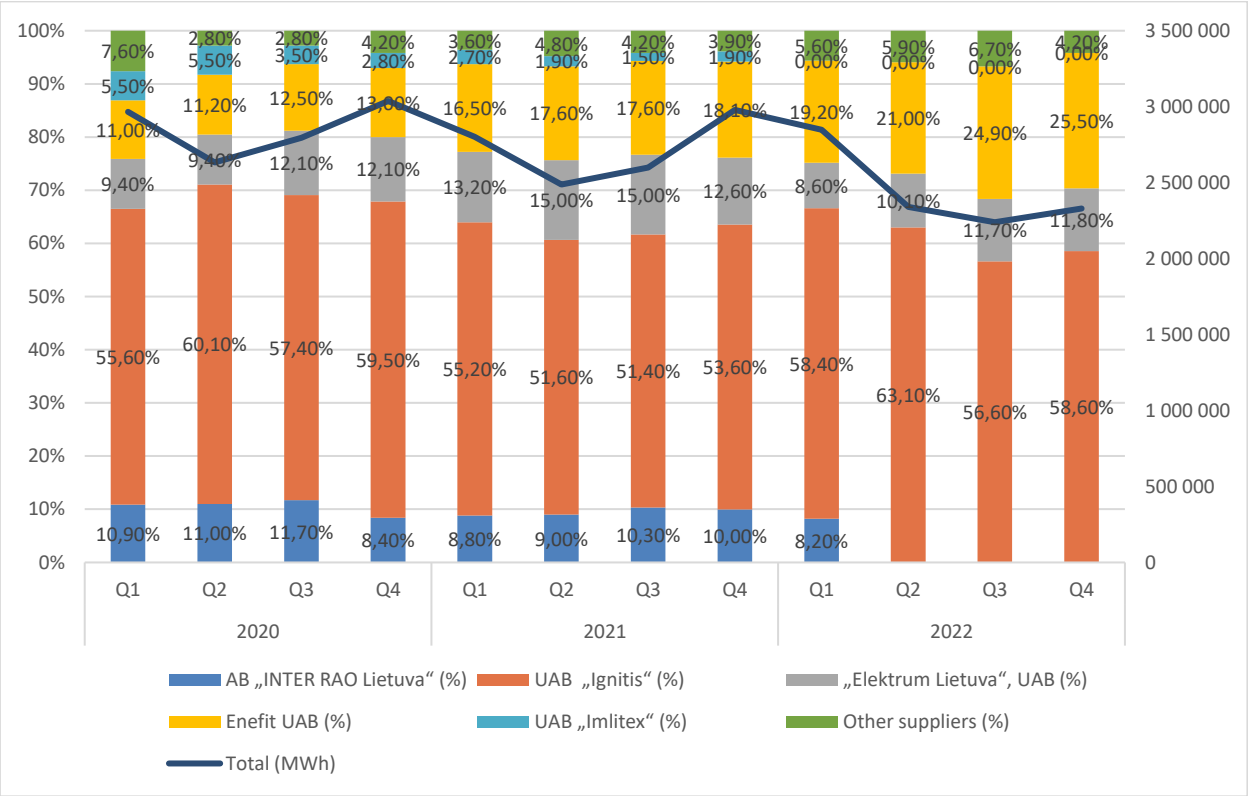
Fig. 11. Structure of the electricity sales market on the electricity exchange by undertaking, %, 2020–2022

Source: *NERC.*

In 2022, more than 56% of all purchases of electricity performed by independent suppliers on the electricity exchange consisted of the purchases of UAB “Ignitis”[10].

[10] UAB “Energijos tiekimas” was merged with UAB “Lietuvos energijos tiekimas”. In 2019, the undertaking changed its name to UAB “Ignitis”

Fig. 12. Structure of the electricity purchases market on the electricity exchange by independent supplier, %, 2020–2022



Source: NERC.

3.2.2. Retail market

- Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

- Article 59(1)(o) of Directive (EU) 2019/944: Market opening and competition

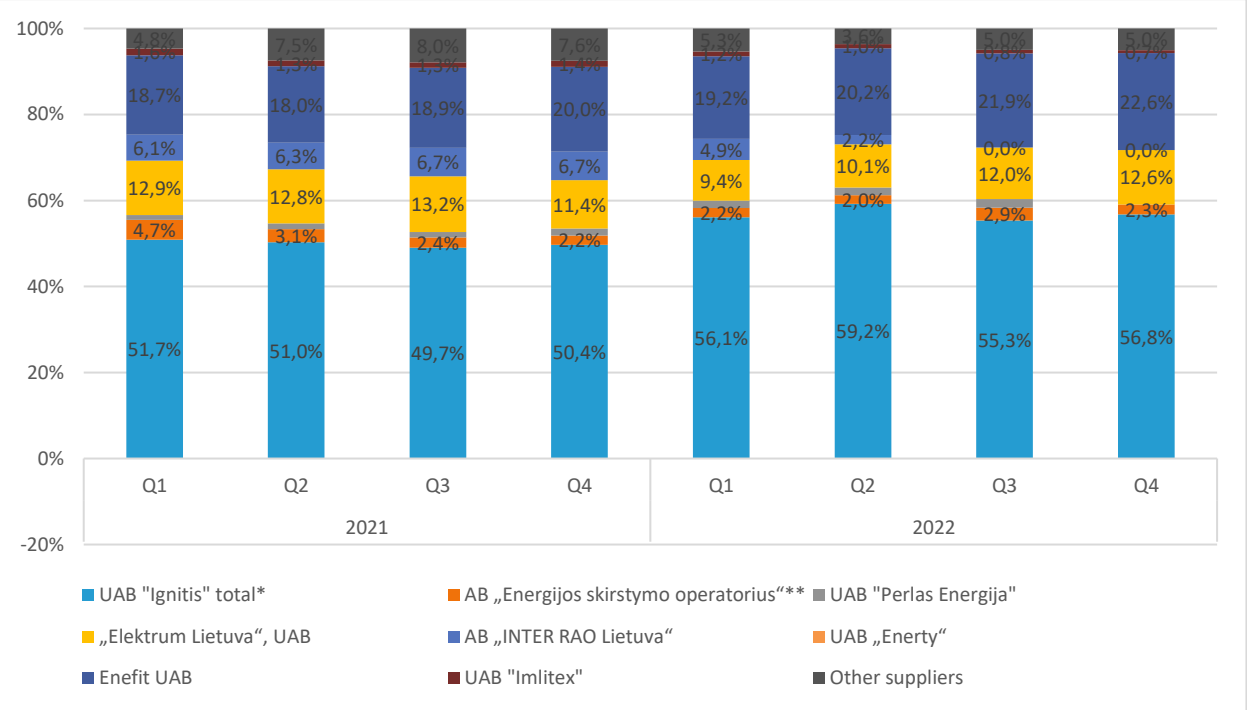
In principle, the retail market is monitored analogously and controlled in accordance with the same principles set out in Chapter 3.2.1. As of 2013, all commercial consumers pay for electricity at market prices, and, if necessary, the guaranteed supply to these consumers is ensured for no longer than 6 months. Household consumers also have the right to choose an independent electricity supplier and purchase electricity in the market or under bilateral contracts.

In 2022, compared to 2021, the number of consumers in the country grew from 1,823,744 to 1,851,649, of which 1,676,113 (90.52%) were household consumers. During 2022, the consumption of non-household consumers purchasing electricity at public prices remained unchanged (0.097 TWh). The consumption of household consumers purchasing electricity at public prices during 2022 amounted to 1.12 TWh and was less than that recorded in 2021 (2.0 TWh). The number of household customers purchasing electricity on the market at contract prices in 2022 increased from 590,463 to 1,187,033 compared to the previous year.

The three largest independent electricity suppliers in the independent retail supply market in 2022 were: UAB “Ignitis”, UAB “Enefit”, and UAB “Elektrum Lietuva”. Their share in the retail

market amounted to 88.8% according to the volume of electricity. Among the largest independent electricity suppliers, UAB “Ignitis” market share grew the most in 2022 compared to 2021 (+6.2%, while UAB “Ignitis” market share grew as much as +14.0%).

Fig. 13. Sales structure of the retail market by supplier, %, 2021–2022



** Public supply of electricity. Up to 1 October 2018, the activities of the public supply of electricity were carried out by AB “Energijos skirstymo operatorius”. In 2020, UAB “Ignitis” is carrying out the public supply of electricity and the independent supply of electricity.*
*** Guaranteed supply of electricity.*

Source: NERC.

The average forecasted electricity price in the Lithuanian market in March-June 2023 is equal to 15.3 c/kWh. The public supplier’s average retail price for a typical household consumer in March-June 2023 was 16.631 c/kWh (electricity purchase and public supply margin), while the price of the use of electricity networks or the service of transmission was 6.814 c/kWh.

In March-June 2023, the public price of electricity for household consumers purchasing electricity from medium-voltage networks is equal to 17.814 c/kWh (excluding VAT) or 5.676 c/kWh (24.2%) lower than in the second half of 2022, and for household consumers purchasing electricity from low-voltage networks, it is equal to 22.670 c/kWh (excluding VAT) or 4.182 c/kWh (15.6%) lower than in the second half of 2022.

Taking into account the electricity price compensation amounts approved by the Government of the Republic of Lithuania for the second half of 2022 (9 c/kWh including VAT) and the first half of 2023 (28.5 c/kWh including VAT) and the minimum electricity price caps below which the compensation is not applicable (24 c/kWh including VAT in the second half of 2022 and 28 c/kWh including VAT in the first half of 2023, respectively), as well as having taken into account the compensation of the additional components to the price of the transmission service, NERC has approved the dedifferentiated public electricity tariffs for the consumers of the medium-voltage and low-voltage networks in the second half of 2022 and the first half of 2023. In this way, NERC ensured the adaptation of the public supply compensation to household consumers. For

independent supply to household customers, refunds are applied to the final consumer price using the same refund rates.

- Article 59(1)(o) of Directive (EU) 2019/944: Prices for household consumers

Household consumers, like commercial consumers, have the right to choose an independent electricity supplier and purchase electricity on the market or under bilateral contracts. Household consumers who have not chosen an independent electricity supplier, as well as vulnerable consumers, are supplied electricity at the public electricity price by the public supplier operating in the territory specified in the licence.

Compared to the previous year, the average annual consumption per household consumer decreased from 1,996 kWh to 1,896 kWh (a decrease of 5%).

As of 1 October 2018, UAB "Lietuvos energijos tiekimas" has taken over the performance of the activities of public supply from AB "Energijos skirstymo operatorius". In 2019, said undertaking changed its name to UAB "Ignitis". UAB "Ignitis" is carrying out both the activities of public electricity supply and the activities of independent electricity supply. In 2022, the undertaking supplied 78% of the total amount of electricity consumed by household consumers, of which 45.7% was supplied at the public electricity price (72.5% in 2021). In 2022, as in 2021, the share of the public supply of electricity in the retail market remained stable – about one-third of the total electricity consumption of household consumers.

In accordance with the provisions of the LE, the electricity consumers whose equipment is connected to the electricity networks managed by the TSO receive guaranteed electricity supply provided by the DSO serving more than 100,000 consumers, while the electricity consumers whose equipment is connected to the electricity networks managed by the DSO receive guaranteed electricity supply provided by the DSO. In 2022, 50,561 consumers used the services of the guaranteed supplier (61,671 consumers in 2021).

Price cap for the public supply of electricity*:* UAB "Ignitis" sells electricity to consumers paying in accordance with the public tariffs; thus, NERC, when calculating the price cap for the public supply of electricity, assessed the amount of energy sold to household consumers, consuming less than 1000 kWh of electricity per year and who have not chosen an independent supplier – in 2023, the price cap for the service of the public supply of electricity at 0.756 c/kWh was set. Compared to 2022 (0.468 c/kWh), it is higher by 0.288 c/kWh. The price increase is due to an increase in wages OPEX and OPEX without costs of wages as a result of the application of the Ministry of Finance's estimated projected wage changes and inflation rates.

NERC has set the public electricity price cap for the second half of 2022 and the first half of 2023. The price cap for consumers connected to the medium-voltage network, excluding compensation for the supply price and additional transmission price components, increased by 32.0% (comparing the first half of 2023 with the second half of 2022), and for consumers connected to the low-voltage network by 34.1%. In these prices, the share of NERC regulated price for medium-voltage consumers decreased by 56.1% and for low-voltage consumers by 44.6%, excluding the compensation of the additional price components, but the overall increase in the price was due to a more than doubling of the cost of purchasing electricity.

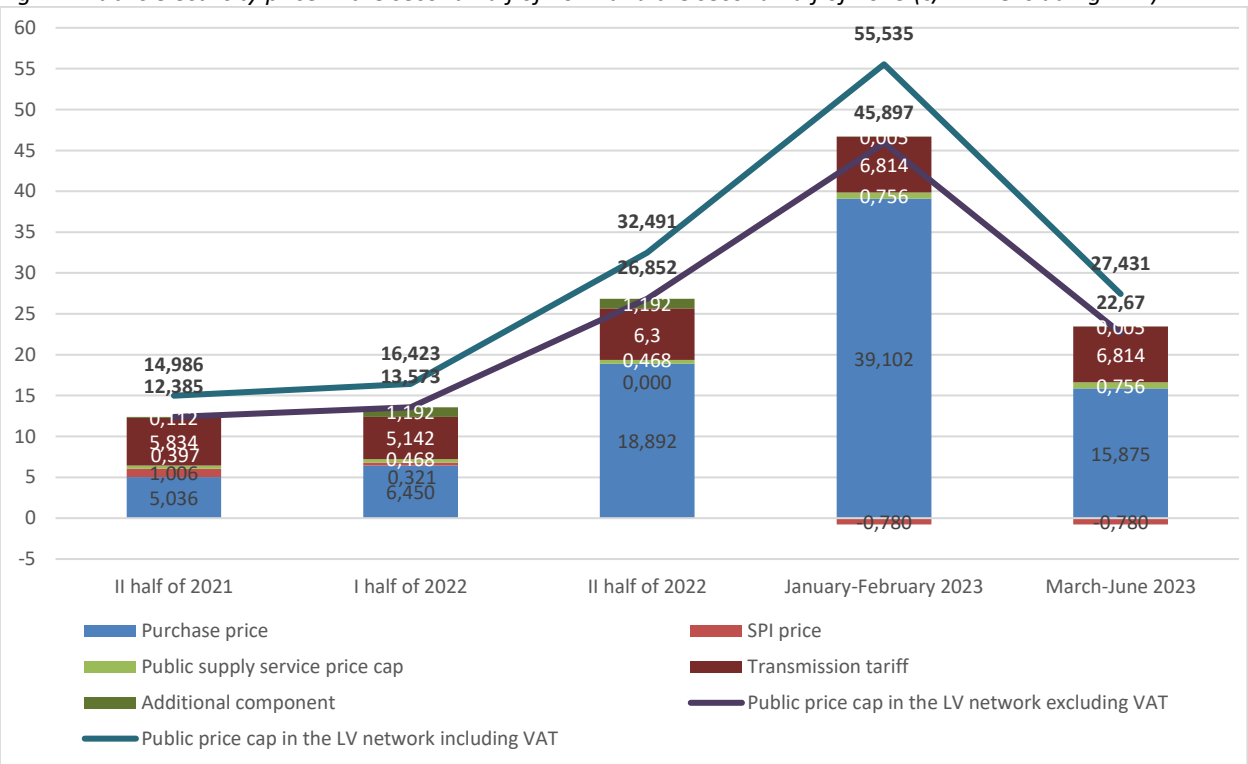
Household consumers pay for electricity in accordance with the public tariffs established by NERC. For the final consumer, the price of electricity consists of:

- the purchase price;
- SPI price;
- the price of system services;
- the price of transmission service;
- the price of distribution service in medium-voltage and low-voltage networks;
- the supply price;
- additional component.

In 2022, having established all the components of the price of electricity, NERC approved the public price of electricity for the first half of 2023 for household consumers purchasing electricity from medium-voltage networks – 41.041 c/kWh (excluding VAT) or 17.551 c/kWh (74.72%) higher than in the second half of 2022; for those purchasing electricity from low-voltage networks – 45.897 c/kWh (excluding VAT) or 19.045 c/kWh (70.93%) higher than in the second half of 2022. These changes were mainly due to the increase in the price caps for the public supply service and the purchase price of electricity for public supply, which was mainly influenced by the increase in the forecast electricity market price.

Taking into account the significant decrease in the market price of electricity in January 2023 and the request of the Government of the Republic of Lithuania to review and update the market prices for the purchase of electricity and the prices for the public supply of electricity to household consumers, NERC has recalculated the public price of electricity for household consumers purchasing electricity from the medium-voltage network for the period of March–June 2023 at 17.814 c/kWh (excluding VAT), or 5.676 c/kWh (24.16 %) lower than in the second half of 2022; for those purchasing electricity from low-voltage networks, 22.670 c/kWh (excluding VAT), or 4.182 c/kWh (15.57%) lower than in second half of 2022.

Fig. 14. Public electricity price in the second half of 2021 and the second half of 2023 (c/kWh excluding VAT)



Source: NERC.

- Article 59(1)(o) of Directive (EU) 2019/944: Pre-payment systems

The pre-payment system is applied to the following services provided by the largest DSO:

- disconnection-connection upon request of the client;
- disconnection-connection after payment of the debt;
- services of resistivity measurement;
- services of smart metering implementation;
- other services.

The pre-payment system of consumers purchasing electricity from the public electricity supplier applies to the services listed in the table below.

Table 9. *Services of the public electricity supplier that are subject to a pre-payment system*

Service group	Explanation of the service/comments
Remuneration due for bailiff's actions	Applicable to clients who have been made subject to debt recovery and bailiff's actions have been performed.
Remuneration due for notarial actions	Applicable to clients who have signed promissory notes and have not paid them on time, the notary is paid a fee for issuing the enforcement record.
Advance payment for the electricity consumed	The service has never been provided.
Fine for failure to comply with contractual obligations	The service has never been provided.
Legal action administration fee (lawyer's services, commission fee for payment order and confirmation of stamp duty order, other expenses)	Applicable to clients whose debt has been handed over to the court, judicial debt recovery has been carried out.
For interest awarded by the court	The service has never been provided.
Stamp duty	Applicable to clients whose debt has been handed over to the court.

Source: NERC.

- Article 59(1)(o) of Directive (EU) 2019/944: Dynamic price contracts

In 2022, approximately 10,000 dynamic contracts were concluded with household consumers. In the second half of 2022, smart meters were launched, allowing consumers to start choosing dynamic pricing contracts more actively (the number of dynamic pricing contracts in 2021 was around 1,100). For consumers with smart meters, the DSO AB "Energijos skirstymo operatorius", and UAB "Ignitis" offer the electricity tariff plan under the title "Smart", in which the following time intervals are applied: the energy component of night, morning, day, and evening. The time intervals of Saturdays, Sundays, and public holidays are broken down into the relevant time intervals of energy components of Night and Day.

- Article 59(1)(o) of Directive (EU) 2019/944: Smart meter use

At the end of 2022, 210,464 automated meters had been installed in Lithuania, of which 177,799 automated meters had been installed for household customers.

DSO AB "Energijos skirstymo operatorius" had planned to start mass deployment of smart metering devices (100% for commercial consumers and 54% for household consumers consuming more than 1,000 kWh/year) in the second half of 2021, but in order to ensure the

technical and data security requirements and to achieve the best results, the deployment was delayed until the first half of 2022. In the smart metering project, a contract for the purchase of smart meters and related systems was signed in May 2021 and active deployment of the meters started in the second half of 2022. NERC performs remote monitoring of the project's implementation, i.e. AB "Energijos skirstymo operatorius" developed a monitoring system and has received the approval of NERC. In 2022 and 2023 (no later than by 1 July), AB "Energijos skirstymo operatorius" will have to submit reports on the implementation of the project, as well as supporting documents, to NERC in order to ascertain that the created benefits correspond to the financial and economic indicators of the investment project coordinated by NERC.

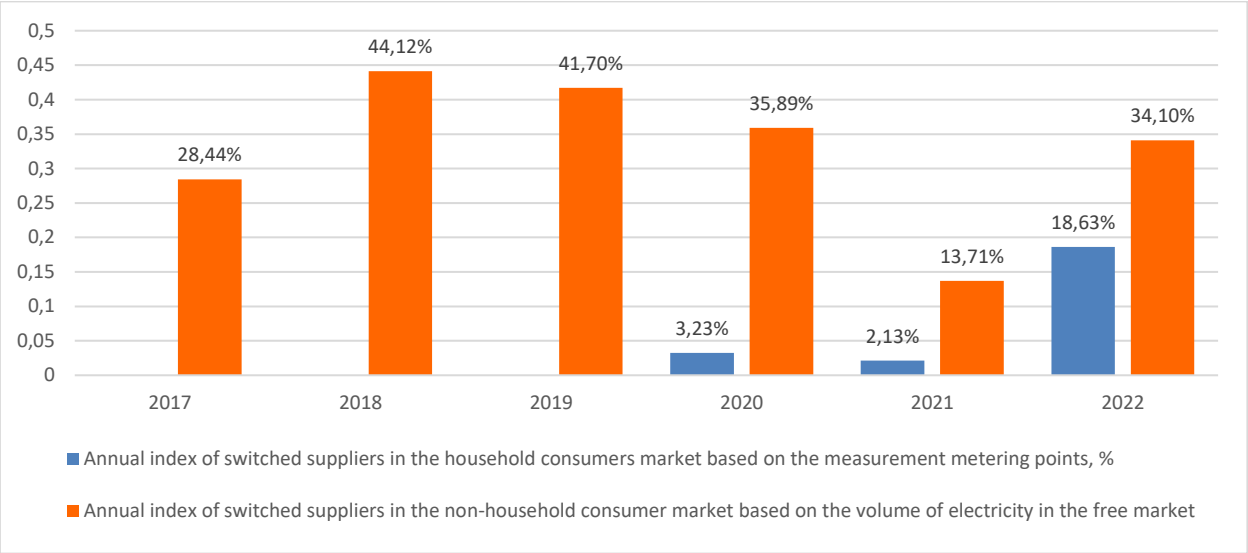
The DataHub project has introduced additional new modules or upgraded existing ones during 2022, making it easier for suppliers to terminate and cancel contracts and switch suppliers.

- Article 59(1)(o) of Directive (EU) 2019/944: Electricity supplier switching index

Following the adoption of the LE amendments in May 2020 and after the launch of the liberalisation process of the electricity retail market, household consumers, like commercial consumers, also have the right to choose an independent electricity supplier and purchase electricity on the market or under bilateral contracts. By 27 December 2022, 98% (95,542 consumers) of consumers of Stage I, 93% (738,886 consumers) of consumers of Stage II, 46% (394,006 consumers) of consumers of Stage III and 6,999 unallocated (new) consumers have chosen an independent electricity supplier; in total, the independent electricity supplier was chosen by 1,187,033 consumers (in total, there are over 1.710 million consumers in Stages I–III). In 2021, it was decided to extend the deadline for Stage II consumers (consuming 1000–5000 kWh/year) to 18 June 2022. In 2022, it was decided to extend the deadline for Stage III consumers (consuming up to 1000 kWh/year) to 1 January 2026.

The figure below shows the annual index of switched suppliers in the non-household consumer market based on the volume of electricity and in the household consumer market based on measurement metering points. In 2022, the annual index of switched suppliers in the non-household consumer market based on the volume of electricity in the free market amounted to 34.1% and, in the household consumer market, based on measurement metering points it amounted to 18.63%. In 2022, compared to 2021, the annual index of switched suppliers in the non-household consumer market based on the volume of electricity in the free market increased up to 20.4%, while in the household consumers market based on measurement metering points it increased up to 16.5%.

Fig. 15. Annual index of switched suppliers in the non-household customer market based on the volume of electricity in the free market and in household customer market based on measurement metering points in 2017–2022, %



Source: *NERC.*

- Article 59(1)(o) of Directive (EU) 2019/944: Charges for the services of technical maintenance

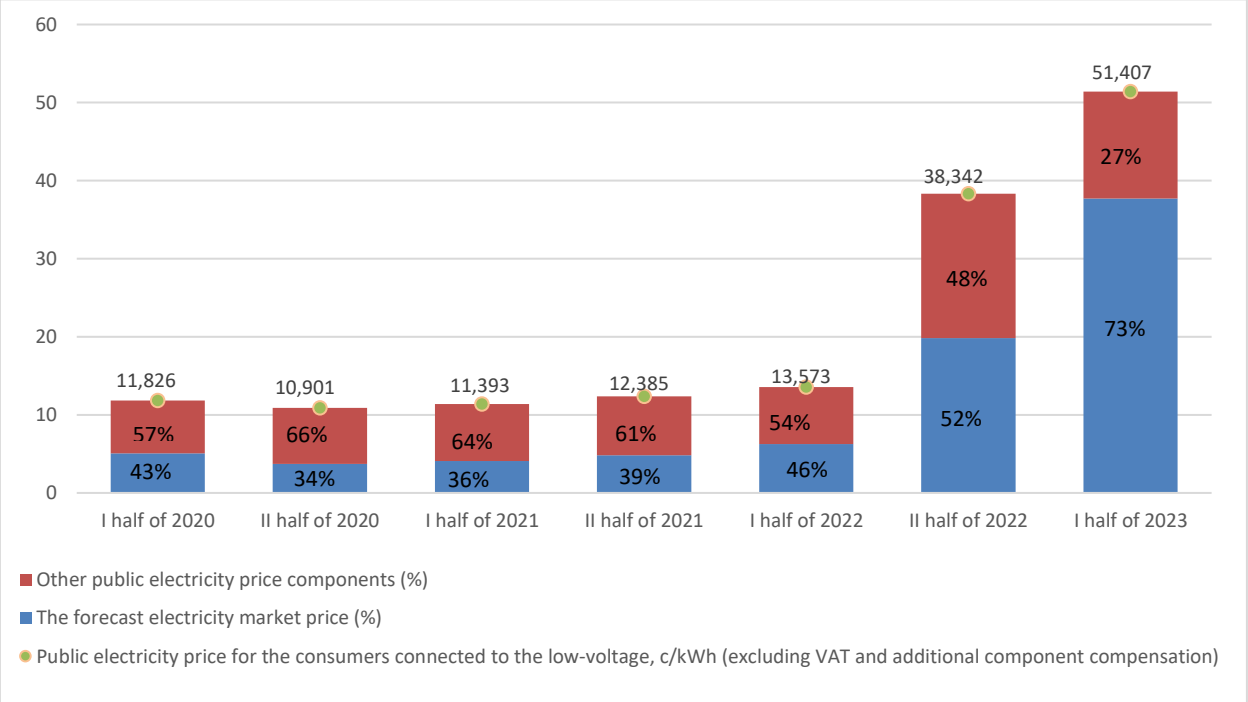
According to the annual reports on regulatory activities, NERC assesses the costs of electricity transmission and the main DSOs (AB "Litgrid" and AB "Energijos skirstymo operatorius"), small DSOs (AB "Achema", AB "Akmenės cementas", AB "Lifosa", UAB "Dainavos elektra"), repair, maintenance and operation, personnel, administrative and other costs. Economically justified technical maintenance costs for electricity transmission activities and electricity distribution activities are included in setting the price cap of the TSO transmission service and the price cap of the DSO distribution services via medium-voltage and low-voltage networks.

- Article 59(1)(o) of Directive (EU) 2019/944: Link between the price of electricity for household consumers and the wholesale electricity price

In accordance with the Methodology for the Setting of the Price Cap for Electricity Transmission, Distribution and Public Supply Services and of Public Supply approved by NERC, one of the components of the public electricity price is the cost of the purchase of electricity. This price consists of the forecast market price of electricity, determined by NERC in accordance with the Methodology for the Setting of the Forecast Electricity Market Price and Reference Price, as approved by NERC, as well as other costs related to the purchase of electricity, such as electricity exchange fees, costs of electricity balancing, and correction of the share of forecast and actual electricity purchase costs.

It should be noted that, in accordance with the Methodology for the Setting of the Forecast Electricity Market Price and Reference Price, NERC sets the forecast electricity market price based on published futures data.

Fig. 16. Share of the electricity market price (%) within the public electricity price cap in the first half of 2020 and the first half of 2023

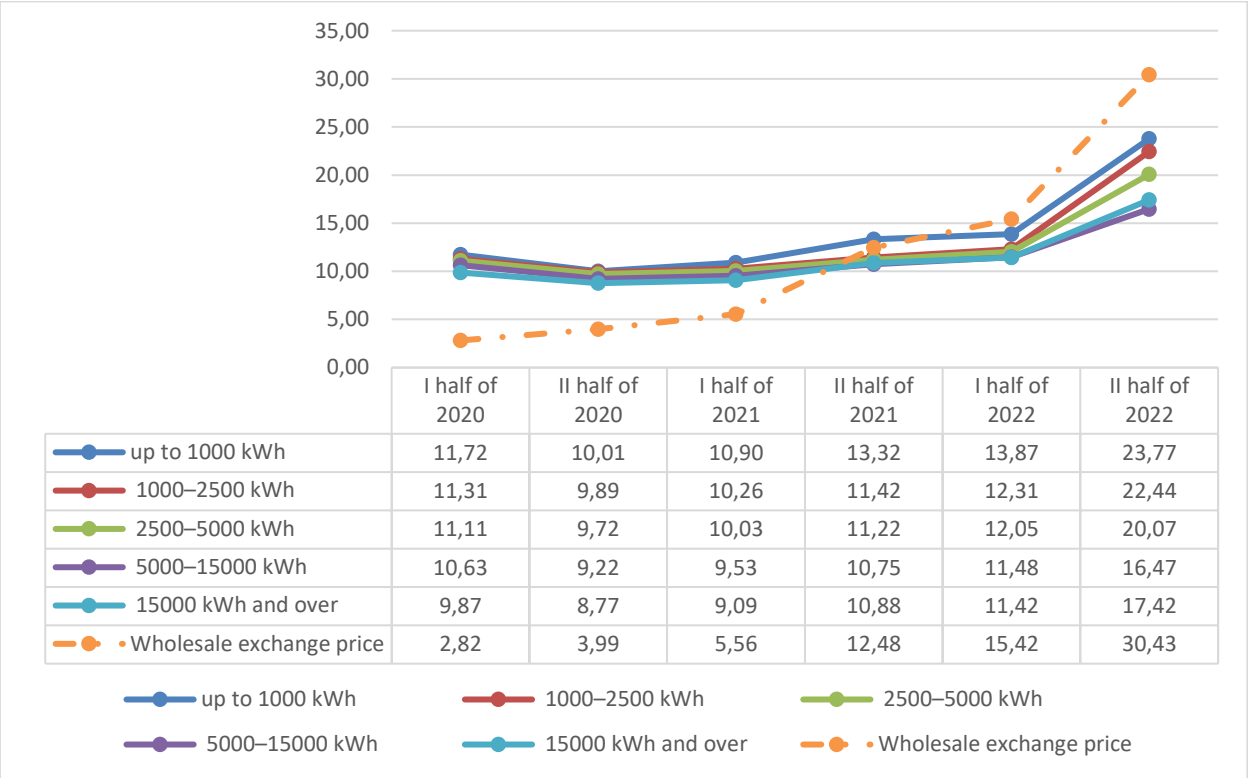


Source: *NERC.*

The forecast electricity market price within the public electricity purchase price, which applies to household electricity consumers, accounts for more than 30% of the total public electricity price applied to consumers connected to low-voltage networks, and as much as 73% of the total public purchase price of electricity charged to consumers connected to low-voltage networks in the first half of 2023.

In 2022, the wholesale electricity market witnessed a sharp spike in electricity prices. On the electricity exchange (Nord Pool), the average purchase price of electricity in 2022 increased almost 3.3 times between January and August, from 145.87 to 480.39 EUR/MWh, and decreased to 264.28 EUR/MWh by the end of the year. The average 2022 exchange price (EUR 230.23/MWh) increased almost 2.5 times compared to 2021 (EUR 90.45/MWh).

Fig. 17. Change in the average electricity market price (c/KWh) for household consumers and change in the average electricity price (c/KWh) on Nord Pool in the first half of 2020 and the second half of 2022



	I half of 2020	II half of 2020	I half of 2021	II half of 2021	I half of 2022	II half of 2022
up to 1000 kWh	11,72	10,01	10,90	13,32	13,87	23,77
1000–2500 kWh	11,31	9,89	10,26	11,42	12,31	22,44
2500–5000 kWh	11,11	9,72	10,03	11,22	12,05	20,07
5000–15000 kWh	10,63	9,22	9,53	10,75	11,48	16,47
15000 kWh and over	9,87	8,77	9,09	10,88	11,42	17,42
Wholesale exchange price	2,82	3,99	5,56	12,48	15,42	30,43

Source: Calculations by Nord Pool, Eurostat, NERC

According to Eurostat data (https://ec.europa.eu/eurostat/data/database), the average electricity price for household electricity consumers consuming up to 1,000 kWh/year has risen by as much as 118% (from 10.90 to 23.77 c/kWh) in the second half of 2022 compared to the first half of 2021. As the vast majority of household consumers (about 99.53%) have opted for fixed-price electricity plans, the increase in prices for these consumers has not been as significant.

- Article 59(1)(o) of Directive (EU) 2019/944: Distortion or restriction of competition

Article 8(9)(15) of the Law on Energy establishes that NERC monitors whether there are any occurrences of contractual practice that restrict competition, including exclusivity clauses whose application may prevent large non-household consumers from entering into contracts with more than one supplier at the same time or restrict their ability to do so.

The procedures for submitting information on distortions or restrictions on the electricity market, including the provision of appropriate information, as well as submitting investigations of relevant cases within the market to the Competition Council of the Republic of Lithuania shall be carried out in accordance with the procedures established by the law. NERC conducts market research in order to ensure effective competition within the electricity sector, as well as to prevent market participants from applying excessive prices or using price pressure due to the lack of effective competition, thus causing harm to market participants. It should be noted that no such cases were recorded in 2022.

- Articles 59(1)(s) and 5(1) of Directive (EU) 2019/944: Competitive prices

In accordance with the provisions of the Law on Energy, at least once every 5 years, NERC publishes recommendations relating to compliance of prices for the services within the energy sector with transparency, non-discrimination and other requirements laid down in legislation, and submits them to the Competition Council of the Republic of Lithuania. NERC approved said recommendations by Resolution No O3-373 of June 2015 Regarding the Approval of the 2015 Recommendations Relating to Compliance of Prices for the Services Within the Energy Sector with Transparency, Non-discrimination and Other Requirements Laid Down in Legislation. The recommendations are published on NERC website[11]. The new recommendations are expected to be published in 2023.

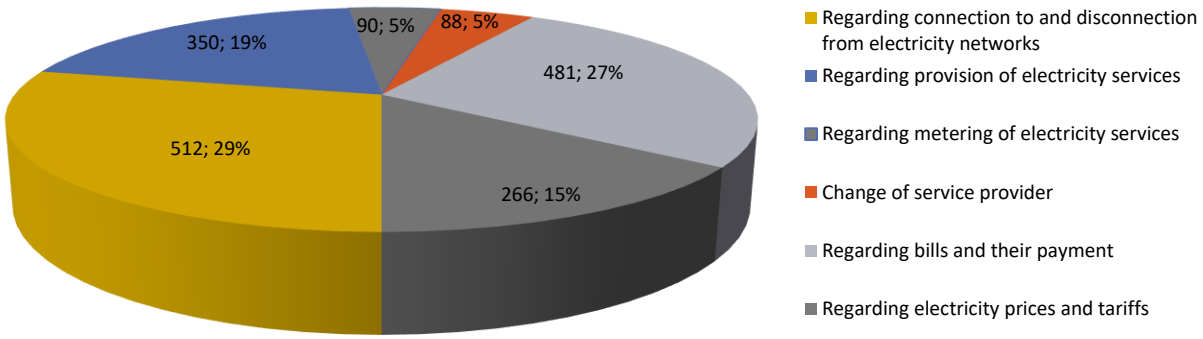
More information on electricity prices and competition in the retail market is provided in the chapter "Market opening and competition".

- **Consumer protection and examination of applications**

- Article 59(1)(o) of Directive (EU) 2019/944: Household consumer complaints

In 2022, NERC received 1631 applications regarding the electricity sector. It should be noted that a single application often raises several issues (e.g. bills and applied prices, bills and accounting and provision of services and applied prices), so the number of received applications is lower than the total number of raised issues according to their nature.

Fig. 18. Distribution (%) of applications within the electricity sector received in 2022 according to the nature of the application



Source: NERC.

- Article 59(1)(o) of Directive (EU) 2019/944: Disconnection of consumers from the electricity network

In Q1–Q4 2022, due to outstanding debt, AB "Energijos skirstymo operatorius" interrupted the transmission of electricity to 3,957 customers, of which 2,921 were household consumers. The

[11] https://www.vert.lt/Puslapiai/statine/komisijos-nutarimu-sarasas.aspx.

interruption of electricity due to debts is carried out at any time of the year. The interruption of electricity is not carried out:

when the maximum daily air temperature is below minus 15 (fifteen) degrees Celsius;

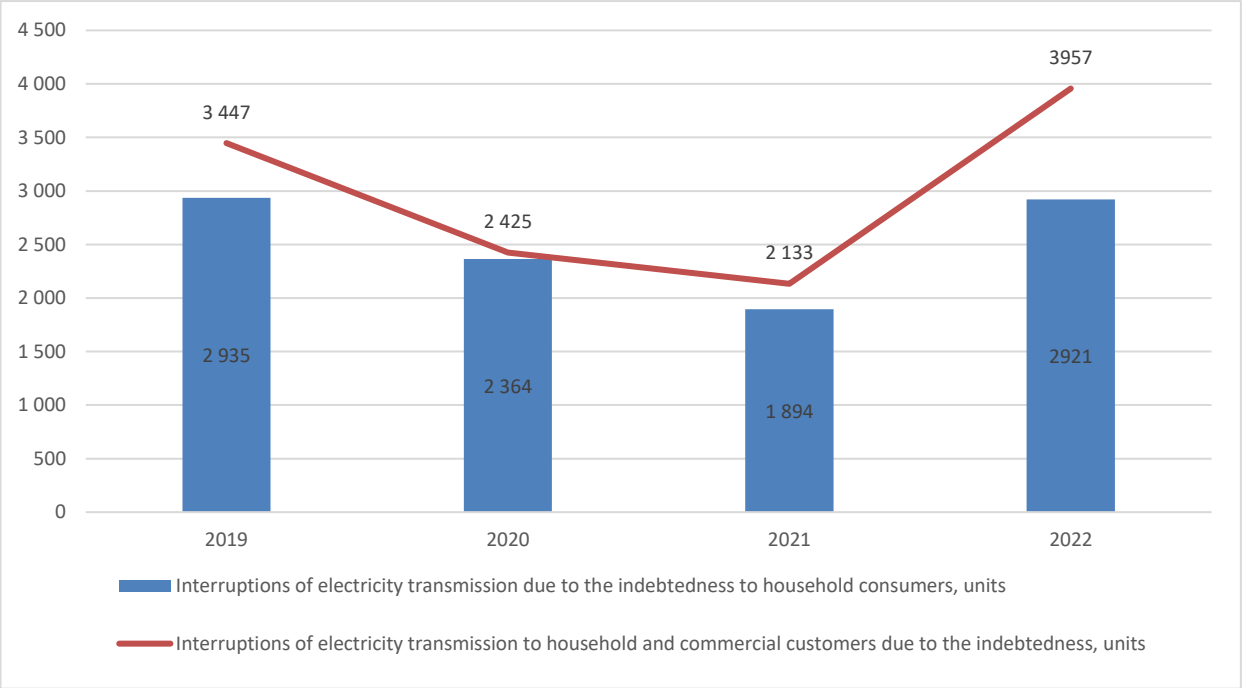
when the maximum daily air temperature is above plus 30 (thirty) degrees Celsius;

on Fridays, Saturdays, Sundays, public holidays and pre-holidays, except in certain cases where:

the electricity supply is temporarily interrupted through no fault of the network user and when the electricity supply is interrupted through the fault of the network user. In such cases, the supply to the consumer may be interrupted on the day following the end of the circumstances set out in this item if said vulnerable consumer has been notified about the interruption in accordance with the procedure laid down in the Rules for the Supply and Use of Electricity and other implementing legislation of said law.

The average number of working days from the date of the notification regarding the payment of the bill and the disconnection in the case of failure to pay the bill is 22 working days.

Fig. 19. Interruptions of electricity transmission due to indebtedness in 2019–2022



Source: NERC.

- Article 59(1)(p) of Directive (EU) 2019/944: Contractual practice that restricts competition

In 2022, a contractual practice that restricts competition was not identified.

- Articles 5(2) and 59(1)(s) of Directive (EU) 2019/944: Protection of vulnerable consumers and consumers experiencing energy poverty

Measures for the protection of vulnerable consumers are provided for in the LE and the Description of the Procedure for the Application of Additional Guarantees for Socially Vulnerable

Electricity Consumers approved by Resolution of the Government of the Republic of Lithuania No 527 of 27 May 2015.

Under the LE, household consumers, including vulnerable consumers, have the right to:

1) unilaterally terminate, free of charge, the electricity transfer service contract and/or electricity sales contract upon notifying the network operator and/or supplier in writing no later than 2 weeks before the planned contract termination date. Until 27 July 2021, the deadline was 3 weeks.
2) conclude electricity sales contracts of indefinite duration with the public supplier in cases wherein the household consumer does not choose an independent electricity supplier or the independent supplier of their choice fails to fulfil the assumed obligations and the household consumer intends to purchase electricity from the public supplier, as well as an electricity sales contract of indefinite duration with an independent supplier and an electricity transfer service contract with the distribution network operator.

As part of the liberalisation of the electricity market, the public supplier has to cut off the supply of electricity to household consumers in the following steps: 1 January 2021 – for all household consumers whose actual electricity consumption at the premises was at least 5 000 kWh in the period from 1 June 2019 to 31 May 2020, as well as for household consumers whose premises are connected to medium-voltage electricity networks, except for consumers who have been classified as vulnerable at least once in the period from 1 June 2019 to 31 December 2020; 1 July 2022 – for all household consumers whose actual on-site electricity consumption during the period from 1 June 2020 to 31 May 2021 was at least 1 000 kWh, with the exception of vulnerable consumers who have acquired the status of vulnerable consumer at least once during the period from 1 June 2020 to 30 June 2022; 1 January 2026 – for all other consumers supplied at the public electricity price, including vulnerable consumers.

The LE also provides for additional measures for the protection of the rights and legitimate interests of vulnerable consumers, i.e., the supply and/or transfer of electricity may not be restricted and/or interrupted for vulnerable consumers when they fail to pay for the supplied electricity within the set time limit, do not pay or pay in part for the electricity transfer service or other related services, provided that the debt owed by said vulnerable consumers to the distribution network operator or supplier is or was no larger than 3 basic social benefits.

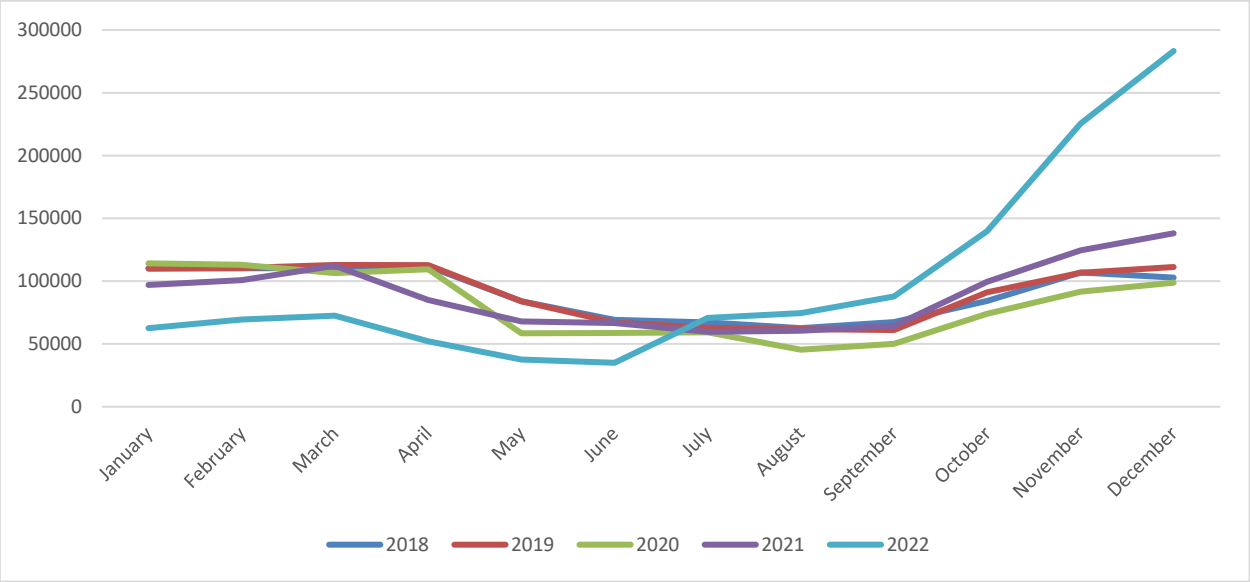
Vulnerable consumers have the right to pay the distribution system operator or supplier by the last day of the month following the calendar month during which electricity has been transferred and/or supplied to the consumer or other related services have been provided (except in cases wherein, at the request of the vulnerable consumer, longer time limits for payment have been agreed on).

When carrying out the connection of electrical equipment of vulnerable consumers to the electricity networks managed by the DSO operator, where the connection fee exceeds EUR 600, a share of 60% of the connection fee is paid within 10 calendar days from the signing of the connection service contract by the consumer, while the remaining share of the fee is paid within 10 calendar days from the end of the contract works. The provision of the connection service commences once the vulnerable consumer pays the first share of the connection service fee. The distribution network operator informs the vulnerable consumer about the end of the works provided for in the work contract and provides the documents necessary for the payment in accordance with the procedure laid down in the connection service contract.

Also, if vulnerable consumers fail to pay for the supplied electricity within the set time limit, do not pay or pay in part for the electricity transmission service or other related services, interest on late payment is not calculated for the 3 months following the date on which the time limit has been exceeded.

In the Description of the Procedure for the Application of Additional Guarantees for Socially Vulnerable Electricity Consumers approved by the Government of the Republic of Lithuania, it is established that if a vulnerable consumer wishes to receive a paper payment document, the distribution network operator or public supplier may not require the consumer to cover the costs of submitting the paper payment document to the consumer.

Fig. 20. Number of socially vulnerable consumers in 2018–2020



Source: NERC.

- Article 5(3), (4) and Article 59(1)(s) of Directive (EU) 2019/944: Intervention by setting electricity prices for vulnerable household consumers

According to the provisions of the LE, the public electricity supplier supplies electricity to vulnerable consumers at the public electricity price. This price is regulated by the State. More information on the prices of the public supply of electricity applied to vulnerable consumers is provided in the chapter “Prices for household consumers”.

Vulnerable electricity consumers also have the right to choose an independent electricity supplier.

- Article 59(1)(t) of Directive (EU) 2019/944: Consumers consumption data

In accordance with the provisions of the LE, consumers have the right to acquaint themselves with the electricity consumption data, including the amount of consumed electricity, as well as, after entering into a clear agreement, to allow any supplier to use their metering data free of charge, to which the consumer is also entitled to free of charge.

The network operator is responsible for the organisation of measurement and metering of the electricity transferred via the electricity networks managed by them. The amount of electricity consumed by the consumers connected to the distribution networks and purchasing electricity from public or independent suppliers, which is to be established by the network operators based on meter readings, is recognised by the TSO as the actual amount of consumed electricity that must be purchased by the public or independent supplier.

After the end of the calendar month, no later than within 4 (four) working days, the DSO must provide the supplier with the available data on the amounts of electricity received from the distribution network and/or transferred to the distribution network by the network users who are located in the territory indicated in the operating licence of the DSO and who have concluded electricity purchase and/or sales contracts with the said supplier.

If the electricity meter is not connected to the automated data reading system of the DSO, commercial users may:

- declare their electricity consumption data on the operator's self-service website;
- the amount of consumed electricity may be calculated on the basis of the annual average of electricity consumption if the consumer does not provide the actual readings within the time limit stipulated in the contract.

If the electricity meter is connected to the automated data reading system of the DSO, commercial users can see their electricity consumption data on the operator's self-service website, there is no need for the consumer to declare the data themselves. Customers of the main supplier UAB "Ignitis" can declare their electricity readings on the self-service website and pay for the services online or in cash, via the customer service phone number, or e-mail.

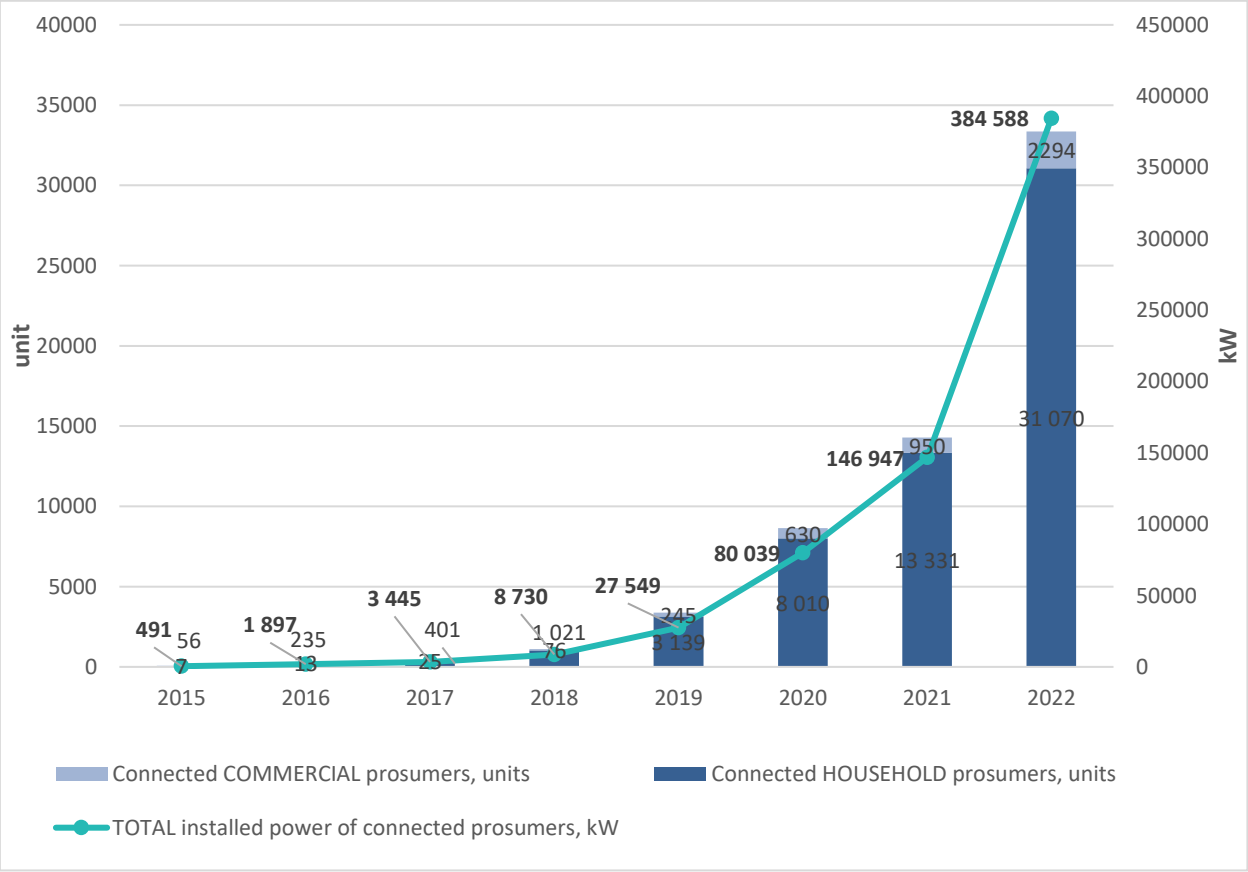
- Articles 59(1)(y) and 14 of Directive (EU) 2019/944: Availability of a comparison tool for the offers of suppliers

In September 2021, NERC introduced a new electricity price comparison calculator for household consumers – a tool that facilitates the process of choosing an independent electricity supplier and provides consumers with more comprehensive information on electricity tariffs charged by suppliers. The calculator allows for the comparison of offers from different independent electricity suppliers based on criteria relevant to consumers: the consumer's annual (monthly) electricity consumption, the number of time zones, the demand for renewable energy, the duration of the price lock-in offered in the plan (1–12 months, 13–24 months or price offers of longer than 2 years), duration of the contract, supplier. Once the criteria have been selected, the user is presented with the plans offered by the suppliers, ranked from cheapest to most expensive. The calculator is available on NERC website https://skaiciuokle.vert.lt/. The calculator does not yet cover variable price contracts and offers for micro and small enterprises, but these functionalities are expected to be available in 2023.

- Article 59(1)(z) of Directive (EU) 2019/944: Obstacles and restrictions regarding the consumption of self-produced electricity and the development of citizens' energy communities

In 2022, an amendment to the LE entered into force, introducing the concepts of active consumers and citizens' energy communities, as well as the rights and obligations of these entities. Under the adopted law, both active consumers and citizens' energy communities can consume electricity generated in power plants they own, as well as sell it to other persons or members of the community.
NERC monitors the change in prosumers who have the right to consume electricity generated by owned or otherwise operated power plants (by supplying it to the network and then withdrawing it). The rapid growth in the number of prosumers leads to the conclusion that there are no significant barriers to the consumption of individually produced energy.
In 2023, NERC adopted a procedure for individuals to apply for citizen energy community status. By May 2023, NERC had granted citizens energy community status to 1 community.

Fig. 21. Number and installed capacity of producing consumers, which have installed solar power plants



Source: NERC.

In 2022, the number of household prosumers who have installed power plants increased by 17,739 and the number of commercial prosumers increased by 1,344, with a total increase in the installed capacity of their power plants of 237.6 MW (167.1 MW for household prosumers, 70.6 MW for commercial prosumers).

4. GAS MARKET

4.1. Network regulation

- Network and LNG tariffs for connection and access

  - Report on the relevant new tariff regulation provisions

Setting of the revenue cap

NERC sets the revenue cap for natural gas services for a period of five years which may be adjusted once a year. NERC approves the specific transmission, distribution, and LNG regasification prices once a year after verifying that they do not discriminate against separate consumer groups and do not exceed the set revenue cap.

In 2022, the Methodology for Setting State-Regulated Prices in the Natural Gas Sector, Methodology for Determining the Weighted Average Import Price of Natural Gas and the Description of the Procedure for the Administration of the Funds Allocated for the Compensation of the Costs of the Liquefied Natural Gas Terminal, Its Infrastructure, the Installation of the Interconnector, the Fixed Operating Costs and the Reasonable Costs of Supplying the Necessary Amount of Liquefied Natural Gas to the Designated Supplier have been amended.

The amendments enable cost-based pricing of the LNG terminal and ensure the compensation of the costs of the administration of the LNG terminal's funds when the security component is equal to zero, as well as create the means to maintain more stable natural gas tariffs for household consumers, and to provide for more transparent, clear and objective principles for the determination of the weighted-average price of imports of natural gas into Lithuania.

- Article 41(1)(a) and (6)(a) of Directive 2009/73/EC

Transmission activities

The transmission activities in Lithuania are carried out by 1 TSO – AB "Amber Grid". The pricing model of entry and exit points is applied in transmission activities with a revenue cap set and adjusted at the entry and exit points of the transmission system.

NERC has set a natural gas transmission revenue cap of EUR 64,167 thousand for AB "Amber Grid" for 2023 (the company's revenue level in 2022 is EUR 40,440 thousand), i.e. 59% higher than in 2022.

After verifying that the prices of natural gas transmission services submitted by AB "Amber Grid" do not exceed the established revenue cap, that they are correctly differentiated to avoid cross-subsidisation between groups of system users, and that they are reasonable and objective, NERC approved the prices to be applied by AB "Amber Grid" as of 1 January 2023, which on average increased by 39% for Lithuanian consumers as compared to the prices applicable in 2022.

Table 10. *AB "Amber Grid" prices for long-term natural gas transmission services for 2019–2023*

				2019	2020	2021	2022	2023	Change in 2023 and 2022, %
At the entry points	Kotlovka GMS			43.46	142.77	142.77	142.77	142.77	0
					35.96**	35.96**	35.96**	35.96	0
	Kiemėnai GMS			43.46	142.77	142.77	142.77	142.77	0
	Klaipėda GMS			9.56*	35.69*	35.69*	35.69*	142.77	4 times
At the exit points	At the domestic exit point	up to 10.4 TWh	For booked capacity, EUR/MWh/day/year	101.6	57.24	92	57.89	100.86	74.23
			For consumption capacity, EUR/MWh/day/year	63.17	50.33	55.55	53.96	65.80	21.94
			For quantity, EUR/MWh	0.69	0.74	0.86	0.09	0.09	0
		over 10.4 TWh	For booked capacity, EUR/MWh/day/year	47.26	57.24	92	57.89	57.89	-11.52
			For consumption capacity, EUR/MWh/day/year	63.17	6.57	7.23	8.46	12.02	42.02
			For quantity, EUR/MWh	0.18	0.08	0.08	0.09	0.09	0
	Kiemėnai GMS	For booked capacity, EUR/MWh/day/year		152.95	88.73	162.32	149.59	116.66	-22.01
		For quantity, EUR/MWh		0.00	0.06	0.06	0.09	0.09	0
	Šakiai GMS	For booked capacity, EUR/MWh/day/year		31.72	39.4	44.12	32.76	46.70	43
		For quantity, EUR/MWh		0.07	0.06	0.06	0.09	0.09	0
	Santaka GMS	For booked capacity, EUR/kWh/h					0.0004	0.00032	-22.05
		For quantity, EUR/MWh					0.09	0.09	0

** The 75% discount applied at the Klaipėda GMS entry point until the end of 2022 does not apply in 2023.*
*** At the entry point of Kotlovka GMS, a 74.8% discount (on average) is applied to capacity with restrictions on transporting gas to a third country.*

Source: NERC.

In order to ensure competition between sources of natural gas imports, as well as to promote competition between natural gas suppliers and not to create additional market barriers to the use of LNG terminal gas, and taking into account FINESTLAT's natural gas transmission pricing decisions, which set uniform natural gas transmission prices at the entry points of the common price area of FINESTLAT, NERC set a cost allocation ratio of 87.36% at the entry point and 12.64% at the exit point.

Taking into account that the Klaipėda LNG terminal has become the main source of natural gas imports to Lithuania, NERC removed the discount at the Klaipėda entry point in 2023.

Distribution activities

In 2022, NERC adjusted the revenue cap of four DSOs: AB "Energijos skirstymo operatorius", UAB "Gren Lietuva", AB "Josvainiai", and UAB "Intergas".

Table 11. *Dynamics of distribution revenue cap in the natural gas sector, EUR thousand, 2019–2023*

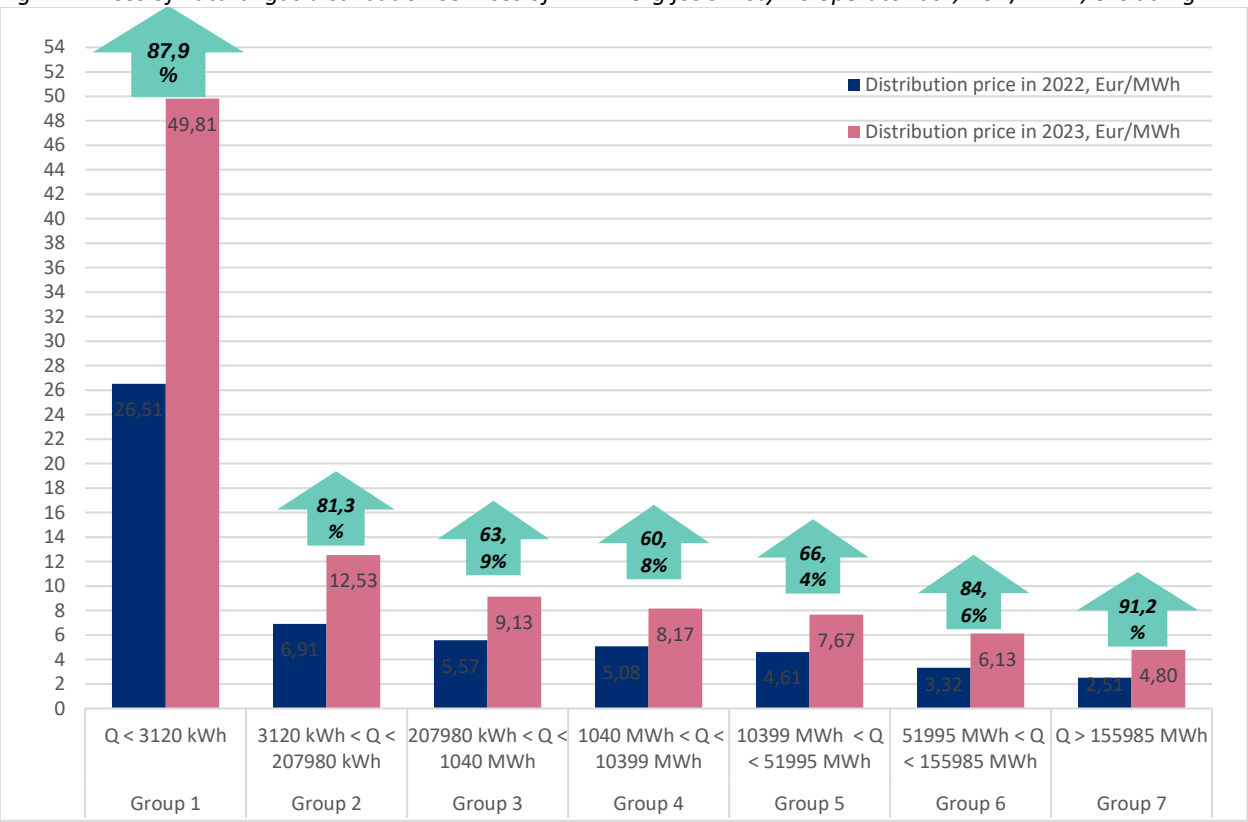
Revenue level, EUR thousands	2019	2020	2021	2022	2023	Change, %
AB "Energijos skirstymo operatorius"	36,465.031	36,965.477	39,661.616	44,611.722	73,674.311	+65.15
AB "Josvainiai"	50.369	54.084	53.349	55.641	46.702	-16.07
UAB "Gren Lietuva"	-	132.566	162.827	180.028	156.949	-12.82
UAB "Intergas"	-	-	2,589.286	2,779.566	3,120.168	+12.3

Source: NERC.

Having analysed the actual data of AB "Energijos skirstymo operatorius" for 2022 and having estimated the submitted forecast data, NERC set the revenue cap for the natural gas distribution activities for 2023 at EUR 73,674,311. Compared to 2022, it increases by 65.15%. The increase in the revenue cap is mainly due to the increase in natural gas technological and labour costs.

The average natural gas distribution price of EUR 10.82/MWh for AB "Energijos skirstymo operatorius" increases by 80.03% compared to 2022 (EUR 6.01/MWh). Specific natural gas distribution prices are differentiated amongst individual consumer groups according to the amount of gas consumed. The change in the prices was determined mainly by the revenue cap for the natural gas distribution activities set for AB "Energijos skirstymo operatorius" for the year 2023.

Fig. 22. Prices of natural gas distribution services of AB "Energijos skirstymo operatorius", EUR/MWh, excluding VAT



Source: NERC.

Liquefied Natural Gas Terminal (hereinafter referred to as LNGT)

NERC has set the revenue cap for LNG regasification activities of AB "Klaipėdos nafta" for the year 2023 at EUR 45,315,523, i.e. 44.50% more than it was set in the previous year (EUR 31,359,743 in 2022). For AB "Klaipėdos nafta", the LNGT regasification operator, the revenue cap

for regasification activities increases due to the planned 71% increase in the cost of environmental pollution taxes and the planned variance of EUR 3,460,452 in other costs (consulting, legal services, costs related to the acquisition of an LNG storage facility by AB "Klaipėdos nafta" and operating costs).

Pricing of specific LNG regasification and congestion services

The LNG regasification price consists of a fixed part and a variable part: the fixed part is calculated per set consumption capacity unit of users of the transmission system (EUR/(MWh/day/year), the variable part is calculated per unit of the quantity of LNG planned to be regasified (EUR/MWh).

NERC two times approved specific prices for LNG regasification services, which were valid in 2022:

- from 1 January to 1 May 2022, the fixed part of the LNG regasification price has been approved for EUR 149.88/(MWh/day/year) excluding VAT, and the variable part of the price for EUR 0.41/MWh excluding VAT.
- from 1 May 2022, taking into account the amendments to the Methodology for Setting State-Regulated Prices in the Natural Gas Sector regarding the pricing of LNG regasification at the cost-based regasification tariff and the LNG terminal's occupancy, the fixed part of the price for LNG regasification is EUR 0/(MWh/day/year) excluding VAT, the variable part is EUR 1.19/MWh excluding VAT.

NERC also set the price of the LNG transshipment service for 2023 – EUR 0.62/MWh excluding VAT. Compared to the price in 2022, the price of the LNG transshipment service increased by 10.71%. The price increase is due to a 10.71% increase in costs attributable to transshipment activities.

From 1 January 2023, the transshipment price is differentiated:

small-scale LNG cargo, the capacity of which does not exceed 15,000 m^3 of LNG – EUR 0.62/MWh;

medium-scale LNG cargo, the capacity of which is from 15,000 m^3 to 50,000 m^3 of LNG inclusively – EUR 0.48/MWh;

large-scale LNG cargo, the capacity of which exceeds 50,000 m^3but cannot exceed the technical capacity of the LNG terminal to reload cargo of the relevant capacity – EUR 0.35 MWh.

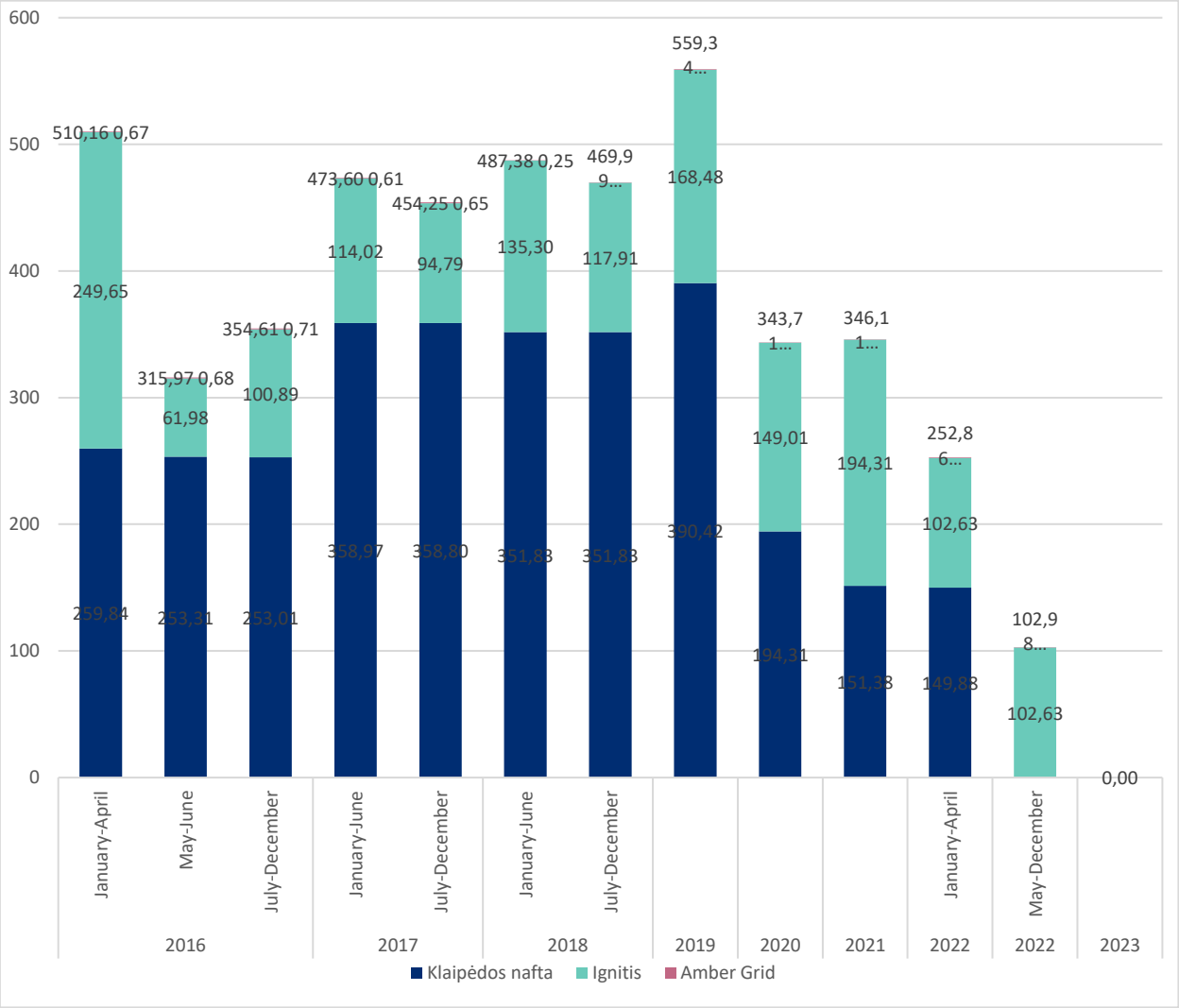
Additional component for the security of supply to the natural gas transmission price

The costs of the installation of the LNGT, its infrastructure and interconnection, which cannot be financed from other sources available to the undertaking implementing the LNGT project, as well as all fixed costs of the operation of the LNGT, its infrastructure and interconnection, which are not included amongst other state-regulated prices, and reasonable costs of the supply of necessary volume of the LNGT are included in the security component in accordance with the procedure set by NERC. The security component has been calculated as the sum of the fixed part of the LNG regasification price, reasonable costs of the supply of terminal necessary volume of the LNGT and the costs of the administration of LNGT funds per one consumption capacity unit.

On 31 March 2022, NERC recalculated the security component after taking into account the change in LNG regasification prices as of 1 May 2022 – the security component of EUR 102.98/(MWh/day/year) entered into force as of 1 May 2022, i.e. a 59.27% lower security component than the one applicable as of 1 January 2022 (EUR 252.86/(MWh/day/year).

On 24 November 2022, after taking into account the occupancy of the LNG terminal in 2023 and the deviation of the nominated supplier's revenues in the previous year due to the difference between the LNG purchase price and the average import price and the change in the consumption capacity, NERC has set the security component on 24 November 2022 for the year 2023 at EUR 0/(MWh/day/year).

Fig. 23. Additional component for the security of supply to the natural gas transmission price



Source: NERC.

Consumer connection rates

In 2022, there were no decisions on tariffs for the connection of new household consumers systems to the natural gas network.

- Article 41(1)(s) and (n) of Directive 2009/73/EC

Storage of natural gas

Currently, there are no persons operating as natural gas storage operators in Lithuania, and operators do not provide linepack and other ancillary services. System users use Inčiukalnis Underground Natural Gas Storage Facility located in the Republic of Latvia. The Latvian transmission system and the storage operator JSC "Conexus Baltic Grid" allocate the capacity of the gas storage facility in the Republic of Latvia in accordance with the submitted applications.

The Law No XIV-1185 of 28 June 2022 amending Articles 2, 46, 47 and 52 of the Law on Natural Gas of the Republic of Lithuania No VIII-1973 amended the provisions of Article 47, which changed the procedure for the accumulation of natural gas reserves – the supply undertakings shall, first of all, use the means of the natural gas market as well as they shall have the right to accumulate the natural gas reserves for the benefit of the vulnerable customers, which may only be used in accordance with the procedure laid down by the Government or the body empowered by the Government. Supply undertakings are required to accumulate natural gas reserves for household consumers. The Government or the authority empowered by it shall, taking into account the natural gas consumption of household consumers in the cases set out in Article 6(1) of 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 and repealing Regulation (EU) No 994/2010, determine the amount of natural gas which must be accumulated by natural gas suppliers in respect of their household consumers and the deadlines for the accumulation of that amount.

Accordingly, point 13 of the Description of Measures to Safeguard the Security of Natural Gas Supply, approved by the Resolution of the Government of the Republic of Lithuania of 26 February 2008 No On the Approval of the Description of Measures to Safeguard the Security of Natural Gas Supply (hereinafter referred to as Description), stipulates the following amounts and time limits of natural gas reserves to be accumulated for the household consumers:

- by 1 November, supply undertakings shall ensure the storage of 100% of the natural gas necessary for the needs of the household consumers;
- by 1 February, supply undertakings shall ensure the storage of 80% of the natural gas required by household consumers;
- by 1 March, supply undertakings shall ensure the storage of 60% of the natural gas required by household consumers;
- by 1 April, supply undertakings shall ensure the storage of 20% of the natural gas required by household consumers;
- from 1 May to 31 October, supply undertakings shall ensure the storage of the amount of natural gas necessary for the average summer period for household consumers and shall apply the other measures referred to in point 12 of the Description, which shall, at the same time, ensure the reliable supply of natural gas to household consumers.

UAB "Ignitis" had 3.3 TWh of natural gas reserves in an underground natural gas storage facility in Latvia as of 31 October 2022.

- Balancing

- Article 41(6)(b) of Directive 2009/73/EC

The balancing regime is carried out in accordance with the provisions of Commission Regulation (EU) No 312/2014 of 26 March 2014, establishing a Network Code on Gas Balancing of Transmission Networks. Accordingly, most of the provisions of this Regulation that are not directly applicable are implemented in accordance with the legislation prepared by the TSOs[12], DSOs[13], and approved by NERC. Said legislation lays down rules for the exchange of information, the pricing of imbalance charge, the setting of neutrality charge, and other aspects of the balancing regime[14]. NERC performs the monitoring of the implementation of the mentioned regulation on a continuous basis.

As of 1 March 2022, the updated AB "Amber Grid" Natural Gas Transmission System Balancing Rules prepared by the transmission system operator AB "Amber Grid", which were coordinated by NERC by its Resolution No O3E-1802 of 30 December 2021 On the Coordination of the AB "Amber Grid" Natural Gas Transmission System Balancing Rules, came into force, with substantial changes:

- providing for the possibility of transferring balancing responsibilities to another system user;
- providing for the calculation and application of the neutrality tax;
- providing for trade notifications by both parties to a gas purchase and sale transaction instead of delivery schedules provided by the companies;
- providing that transaction notifications must be made no later than 30 minutes before the end of the gas day (there is no possibility to adjust the data after the end of the gas day, i.e. there is no "product of the previous day").

- Cross-border issues

- Access to cross-border infrastructure, including allocation and congestion management: Articles 41(6)(c) and 41(9) and (10) of Directive 2009/73/EC

Capacity allocation and congestion management

Capacity allocation and congestion management are carried out in accordance with the requirements of Commission Regulation (EU) 2017/459 of 16 March 2017 establishing a network code on capacity allocation mechanisms in gas transmission systems and repealing Regulation (EU) No 984/2013, and the Commission Decision (EU) 2015/715 of 30 April 2015 partly amending Annex I to Regulation (EC) No 715/2009 of the European Parliament and the Council on

[12] Rules for the Use of the Natural Gas Transmission System of AB "Amber Grid", coordinated by Resolution No O3E-381 of 31 March 2023 of NERC (https://www.e-tar.lt/portal/lt/legalAct/95dda100cf9511ed9978886e85107ab2) Rules for the Balancing of the Natural Gas Transmission System of AB "Amber Grid", coordinated by Resolution No O3E-1802 of 30 December 2021 of NERC (https://www.e-tar.lt/portal/lt/legalAct/223312d0695211eca9ac839120d251c4).

[13] Rules for the Use of the Natural Gas Distribution System of AB "Energijos skirstymo operatorius", coordinated by Resolution No O3E-792 of 28 November 2019 of NERC (https://www.e-tar.lt/portal/lt/legalAct/ec27e5e011d711ea9d279ea27696ab7b)

[14] Methodology for the Determination of the Revenue and Prices of the State Regulated Natural Gas Transmission Activities, approved by Resolution No O3E-314 of 5 October 2018 of the NCC (https://www.e-tar.lt/portal/lt/legalAct/2fd91460c89811e8bf37fd1541d65f38/asr)

conditions for access to the natural gas transmission networks. Accordingly, the majority of the provisions of said legislation that are not directly applicable are implemented in accordance with the legislation prepared by the TSOs[4], the DSOs[5], and the LNGT operator[15], and approved by NERC. These methodologies describe the characteristics of the offered products and the procedure for their booking and allocation.

NERC has agreed on the following legislative changes on this topic in 2022:

- The Rules for the Use of the Transmission System by AB "Amber Grid".
- The Rules for the Use of the LNG Terminal by AB "Klaipėdos nafta" (4 amendments).

The revised legislation will continue to ensure market-based, non-discriminatory and transparent conditions and rules for the use of networks.

The amendments to the AB "Amber Grid" document will ensure a more efficient and higher capacity utilisation of bundled products at the point of interconnection with Latvia, responding to the challenging gas market situation.

Amendments to the document of AB "Klaipėdos nafta" have been made in order to ensure a long-term and more efficient allocation of capacity, changes related to the timing of capacity ordering and other issues related to the challenging gas market situation.

Regional pricing

In 2020, Finland, Estonia and Latvia adopted a decision on the creation of the FINESTLAT transmission service price area and the ITC. Lithuania has not joined this common price area and is considered a separate price area. In order to efficiently develop the regional Baltic-Finnish gas market, NERC sets harmonised prices for transmission services at entry points. In addition, the working group for the creation of the Baltic-Finnish natural gas region was looking for solutions to facilitate agreement on a common natural gas market area of the 4 countries, and to this end, an agreement (Roadmap on regional gas market integration between Estonia, Finland, Latvia and Lithuania) was signed on the initiative of the European Commission in April 2020, setting out the main tasks and deadlines for integration. To achieve the objectives and to create an appropriate ITC mechanism, the TSOs of the 4 countries have engaged "Artelys", a consultancy firm, which carried out a cost-benefit analysis and made proposals for an ITC mechanism in mid-2021.

In November 2021, the natural gas TSOs of the 4 countries drafted and submitted to the national regulators a draft agreement on a regional gas transmission system entry tariff and ITC agreement between the TSOs of Finland, Estonia, Latvia and Lithuania. The national regulatory authorities of the countries concerned have examined the submitted ITC agreement, but have not received sufficient justification from the TSOs that the proposed ITC agreement ensures that the TSOs' cost recovery arrangements are such as to ensure that the TSOs' revenues are not adversely affected. In this context, in March 2022, the national regulators sent a letter to the TSOs asking them to revise the ITC agreement so that the ITC ensures that the TSOs' costs are covered. In April, the TSOs submitted a revised ITC agreement, but by 2022 the changed geopolitical situation had led to fundamental changes in the natural gas market that made the ITC agreement, which had been developed on the basis of different assumptions about the

15 The Rules for the Use of the Liquefied Natural Gas Terminal of AB "Klaipėdos nafta", coordinated by Resolution No O3E-1649 of 01 December 2022 of NERC (https://www.e-tar.lt/portal/lt/legalAct/6a397dc0716d11edbc04912defe897d1)

functioning of the market, no longer relevant to the current situation and could not deliver benefits to all the parties involved.
In this regard, on 12 October 2022, the Chairpersons of the Baltic-Finnish national regulatory authorities agreed to postpone the interconnection of the Baltic-Finnish natural gas market, with a view to interconnection taking place no earlier than October 2024.

- Article 41(11) of Directive 2009/73/EC

Handling of complaints and disputes

In 2022, there were no changes from the information provided in the report last year.

- Article 41(1)(c) of Directive 2009/73/EC

Cross-border agreements

See Regional pricing.

- Article 41(1)(g) of Directive 2009/73/EC

Coordination of TSO investments

NERC coordinates investment projects related to the construction of new energy facilities, rebuilding, modernisation, reconstruction of existing energy facilities or development of energy facilities currently operating, etc. The Law on Energy provides for an obligation of NERC to assess the reasonableness of investments. If investments are not coordinated with NERC, they cannot be recognised as reasonable and are not included in the prices of regulated services. NERC also coordinates and evaluates 10-year development plans prepared by the TSOs and the DSOs.

In March 2023, NERC coordinated the investments of AB “Amber Grid”, coordinated by the list, made or planned to be made in the period 2021–2025, the value of which does not exceed EUR 7,559.7 thousand. Having evaluated the results of the diagnostics, the company has allocated funds for renewal individual sections of the main gas pipelines to ensure reliable and safe operation of the gas transmission system. It will also include the replacement of certain gas system dependencies, the acquisition of necessary assets and the renewal of gas distribution stations. It also invests in software for efficient management of the transmission system and data.

- Implementation of network codes and guidelines

- Network Code on Capacity Allocation Mechanisms
- Network Code on Balancing of Transmission Networks
- Network Code on System Interoperability and Data Exchange

There were no significant changes in 2022 related to the improvement of the implementation of the Commission Regulation (EU) 2015/703 of 30 April 2015 establishing a network code on

interoperability and data exchange rules. On other topics, substantive changes are provided in the following sections: “Access to cross-border infrastructure, including allocation and congestion management” and “Balancing”.

- Tariff Network Code

Pursuant to Articles 26 and 28 of the European Commission Regulation (EU) 2017/460 of 16 March 2017 establishing a network code on harmonised transmission tariff structures for gas, NERC published a public consultation on the Methodology for Setting the Prices of the Services Provided by Lithuanian Natural Gas Transmission System Operator AB “Amber Grid”, for the new regulatory period for gas transmission prices (2024–2028). The following methodological changes are proposed:

- changing the assignment of a specific threshold to a quantity component to an unfixed threshold, determined by a reasoned decision of NERC;
- differentiation of the price for the volume transmitted at the exit points;
- a new domestic entry point targeting biomethane producers;
- changing the within-day multiplier from 1.5 to 1.7.

No comments or suggestions were received from market participants during the public consultation, which closed on 1 February 2023. On 31 March 2023, NERC received ACER’s recommendations, which are currently being assessed.

Table 12. *Key technical indicators of the natural gas network*

Indicators	2018	2019	2020	2021	2022
Country’s maximum consumption (TWh/day)	0.118	0.110	0.115	0.140	0.094
Capacity of the gas pipeline entry points (TWh/year)	187.2	187.2	187.71	187.2	198.58
Capacity of the gas pipeline exit points (TWh/year)	66.35	66.35	66.54	66.35	81.95
Maximum technical gasification capacity, m^3/day	10,244,300	10,244,300	10,244,300	10,244,300	10,244,300
Total volume of LNG containers, m^3	170,000	170,000	170,000	170,000	170,000
Number of TSOs	1	1	1	1	1
TSO network (km)	2,115	2,113	2,113	2,285	2,288
Number of DSOs	5	4	5	5	5
DSO network (km)	9,091	9,602	9,820	9,988	10,090

Source: NERC.

4.2. Promotion of competition and functioning of the market

4.2.1. Wholesale market

Participants and structure of the wholesale market

In 2022, 35,176 GWh of natural gas in the wholesale market of natural gas was sold and (or) consumed, which shows an increase of 47.5%, compared to 23,846 GWh of natural gas sold and (or) consumed in 2021.

Table 13. *Structure of the wholesale natural gas supply market in 2014–2022, GWh*

Structure of the wholesale natural gas supply market	2014	2015	2016	2017	2018	2019	2020	2021	2022
Under bilateral contracts in Lithuania	21,548	23,711	18,329	18,856	17,463	18,831	19,710	19,526	32,167
On the exchange*	1,134	652	299	376	943	2,711	3,687	4,320	3,009
In total:	**22,682**	**24,363**	**18,628**	**19,232**	**18,406**	**21,542**	**23,397**	**23,846**	**35,176**

**Natural gas exchange transactions are assessed if the buyer's trading platform is located in Lithuania.*

Source: NERC.

- Monitoring the level of price, the level of transparency, the level and effectiveness of market opening and competition

- Article 41(1)(i) of Directive 2009/73/EC

In accordance with the provisions of the Law on Natural Gas of the Republic of Lithuania (hereinafter referred to as the Law on Natural Gas), NERC continuously monitors and controls the compliance of undertakings operating in the natural gas sector with the requirements of transparency, non-discrimination, and competition in the natural gas sector established in the Law on Natural Gas and other legislation, their compliance with the conditions and requirements for licenses or permits regulated , the protection, and defence of consumer rights and legitimate interests, including the reliability of the information provided to consumers. Entities operating in the wholesale natural gas market shall make the information, established in separate legislation, publicly available. In accordance with the approved description of the information to be made publicly available, NERC publishes the list of the information to be made publicly available by the undertakings of the natural gas sector on NERC website[16]. In accordance with the aforementioned description, NERC also annually checks the manner in which the information contained in this list is made publicly available by the undertakings. Having identified deficiencies in the published information, NERC draws up recommendations related to compliance with the prices of the services within the energy sector with the requirements of transparency, non-discrimination, and other requirements set out in legislation. In accordance with the provisions of the Law on Energy, these recommendations are published at least once every 5 years and submitted to the Competition Council of the Republic of Lithuania. The new recommendations are expected to be published in 2023.

In order to carry out the monitoring of the market, NERC, in accordance with Rules on the Provision of Information by Energy, Drinking Water Supply and Wastewater Management, Surface Wastewater Management Undertakings approved by NERC, collects information from regulated undertakings. On the basis of the information submitted by said undertakings, in order to enhance the awareness of market participants and ensure that the market participants have access to reliable information, NERC regularly draws up half-yearly reports on the monitoring of the natural gas market and annual development reviews, which are published on NERC website. NERC continued to carry out tasks related to the joint monitoring of the natural gas and electricity markets under REMIT. For more information on REMIT monitoring, see the Electricity Sector Review of this report.

[16] https://www.regula.lt/dujos/Puslapiai/gamtiniu-duju-sektoriaus-ukio-subjektu-viesai-skelbiamos-informacijos-sarasas-.aspx

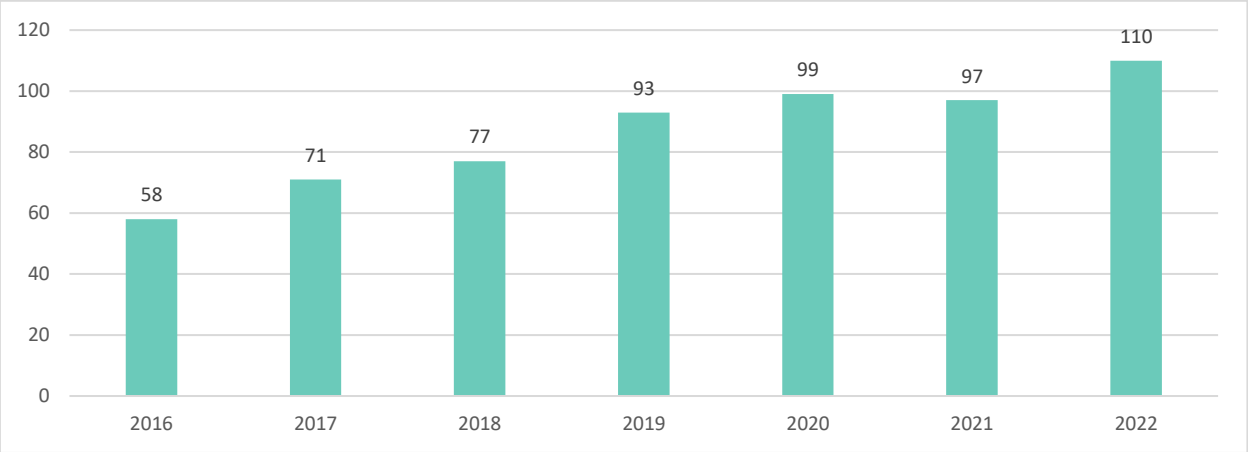
In order to create the preconditions for the development of effective competition within the natural gas markets and prevent the abuse of significant influence of persons within the natural gas markets, NERC conducts market research in accordance with the Rules for Market Research. Accordingly, NERC regularly publishes market research reports on its website and updates said reports, with the exception of information that is considered confidential, as well as publishes and updates the final decisions on the market research results or parts thereof without confidential information. It should be noted that no market research was carried out in 2022.

- Article 41(1)(j) of Directive 2009/73/EC

Trade on natural gas exchanges

At the end of 2022, there were 110 registered participants in the UAB "GET Baltic" natural gas exchange, of which 66 were active.

Fig. 24. Number of participants in the natural gas exchange in 2016–2020



Source: NERC.

On 1 January 2020, UAB "GET Baltic", the regional gas exchange operating in the Lithuanian, Latvian and Estonian markets, successfully launched its operations in Finland, becoming the single regional trading platform for the gas markets of the Baltic States and Finland. 6,946,553 MWh of natural gas was traded on the UAB "GET Baltic" natural gas market in 2022. Compared to the same period in 2021, the volume of natural gas traded on the UAB "GET Baltic" natural gas market is 12.70% less.

In 2022, the average natural gas price on the exchange of UAB "GET Baltic" was EUR 118.16/MWh, or 193.87% higher than in 2021 (EUR 40.21/MWh). In 2022, the turnover of exchange trade amounted to EUR 820.8 million and it was 156.56% higher than in 2021.

- Article 41(1)(k) and (l) of Directive 2009/73/EC

In the area of ensuring the secure supply of natural gas, NERC monitors the main terms and conditions of natural gas supply contracts regarding ensuring the reliability of the supply of natural gas between natural gas supply undertakings and consumers. To that end, supply undertakings provide information to NERC on the main terms and conditions of concluded natural gas supply contracts on a yearly basis, while NERC has the right to require natural gas

undertakings to revise said contracts in such a way that they comply with the requirements laid down in the Law on Natural Gas and other legislation. If the natural gas undertaking fails to comply with this requirement, NERC has the right, in defence of the public interest, to apply to the courts for the amendment of the contract. In 2022, a contractual practice that restricts competition was not identified.

Table 14. *Indicators of the wholesale natural gas market 2016–2022 m.*

	2016	2017	2018	2019	2020	2021	2022
Natural gas production	-	-	-	-	-	-	-
Number of active wholesale market participants, units	9	8	11	9	12	14	16
Share of biogas in the natural gas network	-	-	-	-	-	-	-
Natural gas demand, GWh*	18.628	19.232	18.406	21.542	23.397	23.846	35.176
Gas demand of energy producers	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Import, GWh	24.222	27.374	23.639	28.402	30.487	24.290	36.078
Transported via transmission networks to other EU countries, GWh	368	2.599	2.308	5.990	7.960	1.902	24.814
Main source of imports and its share, %	Gas pipeline (60.32)	LNGT (54.84)	Gas pipeline (64.68)	LNGT (65.32)	LNGT (65.30)	LNGT (67.26)	LNGT (84.88)
Number of natural gas supply sources	2	2	2	2	2	2	2
Market share of the three largest wholesalers, %	31.40	22.14	24.30	24.09	30.37	32.29	44.92
Volume of natural gas traded on the spot market of natural gas, GWh	299	442	1,084	2,438	6,641	7,943	6,780
Volume of natural gas traded on the futures natural gas market, GWh	-	-	-	420	565	14	167
Total volume traded on the natural gas exchange, GWh	299	442	1,084	2,858	7,206	7,957	6,947
Average spot price of natural gas, EUR/MWh	18.07	17.47	22.87	18.42	12.05	40.24	117.38

*under bilateral contracts and natural gas exchange transactions when the buyer's trading platform is located in Lithuania.

Source: NERC.

- Article 41(1)(u) of Directive 2009/73/EC

There were no key changes related to the improvement of the harmonisation of data exchange processes for key market processes at the regional level in 2022. See section "Cross-border issues".

4.2.2. Retail market

- Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

Statistics of the retail natural gas market are provided by assessing natural gas supply undertakings, and market participants (natural or legal persons) who conclude natural gas supply contracts with final consumers[17].

Fig. 25. Market structure by volumes of natural gas purchased in 2016–2022, GWh and %

Source: NERC.

In 2022, there were 621.2 thousand natural gas consumers in Lithuania, of which 613.3 thousand household consumers and 7.9 thousand non-household consumers. In 2021, there were 609.7 thousand household consumers and 8.2 thousand non-household consumers.

Household consumers, who, in terms of the number of consumers, account for 98.74% of the whole retail consumer market, consumed only 35.46% of the natural gas supplied in the retail natural gas supply market. Non-household consumers purchased 64.54% of the volume of natural gas supplied in the retail natural gas supply market, although, as consumers, their number was extremely small compared to the number of household consumers, i.e., only 1.26%.

Household consumer segment

In 2022, 4 companies supplied gas to household consumers in the retail market. In 2022, household consumers consumed 2,552 GWh (10.25% less than in 2021). Household consumers paid EUR 137.447 million for natural gas (137.85% more than in 2021). The increase in revenue

[17] Excluding natural gas supply contracts for final consumers with a natural gas consumption capacity that exceeds the threshold set out in the second subparagraph of Article 2(1)(5) of REMIT (600 GWh).

is due to an increase in the price of natural gas. UAB "Ignitis" continues to be the main supplier of natural gas to household consumers: in 2022, the market share of this company accounted for 99.82% of all sales to household consumers.

Tariffs for household consumers

Natural gas tariffs for household consumers are recalculated twice a year. The natural gas tariff for household consumers consists of a fixed part payable on a monthly basis irrespective of the volume of natural gas consumed, and a variable part, which is paid for the volume of natural gas consumed. In the middle of the year, only the variable part of the tariff is recalculated. The natural gas tariff for household customers includes:

- forecast natural gas price;
- the price of the supply service;
- the price of the supply security;
- transmission price (considering also the security component);
- distribution price;
- the difference between the projected and actual natural gas (product) prices for the previous tariff period, reduced by the amounts for the compensation of the part of the cost of natural gas consumed by household consumers, if such amounts are determined, as referred to in Article 19^2 of the Law on Electricity.

On 24 May 2022, amendments to the Law on Electricity and the Law on Natural Gas entered into force, which provided for the inclusion of the natural gas price compensation amounts in the natural gas tariffs for household consumers, thus reducing the impact of the increase in the price of natural gas imports on household consumers. The compensation rates for natural gas for household consumers have been approved for tariffs with effect from 1 July 2022 and for tariffs with effect from 1 January 2023.

Table 15. *Approved the compensation amounts for the additional component to the price of the natural gas distribution service and the compensation amounts for the part of the price of natural gas supply related to the cost of natural gas purchase*

Undertaking	Amount of compensation for the additional component to the price of the natural gas distribution service (EUR/m³) including VAT		Amount of compensation for the share of the natural gas supply price related to the cost of natural gas purchase (EUR/m³) including VAT	
	from 01/07/2022	from 01/01/2023	from 01/07/2022	from 01/01/2023
UAB "Ignitis"	1.90	0.57	0.54	0.99
UAB "Intergas"	2.70	1.10	0.54	0.99
UAB "Gren Lietuva"	1.72	0.65	0.54	0.99
AB "Josvainiai"	2.55	0.52	0.54	0.99

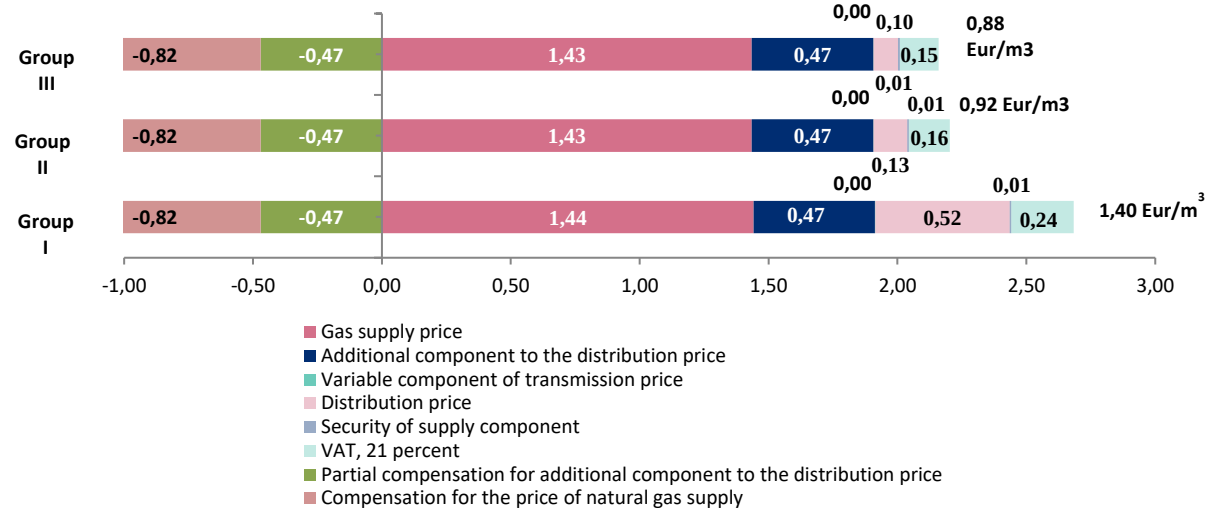
Source: NERC.

Table 16. *Natural gas tariffs for household consumers (EUR including VAT/m³)*

Undertaking	Group	First half of 2022		Second half of 2022		First half of 2023		Change, EUR	
		Fixed part of the tariff	Variable part of the tariff	Fixed part of the tariff	Variable part of the tariff	Fixed part of the tariff	Variable part of the tariff	Fixed part of the tariff	Variable part of the tariff
UAB "Ignitis"	Group I	0.56	0.80	0.56	1.02	0.56	1.40	0.00	0.38
	Group II	3.99	0.55	3.99	0.77	3.99	0.92	0.00	0.15
	Group III	3.99	0.53	3.99	0.75	3.99	0.88	0.00	0.13
UAB "Gren Lietuva"	Group II	3.94	0.89	3.94	1.01	3.94	1.16	0.00	0.15
AB agrofirm "Josvainiai"	Group I	0.63	0.85	0.63	0.95	0.63	0.98	0.00	0.03
	Group II	3.99	0.75	3.99	0.86	3.99	0.87	0.00	0.01
UAB "Intergas"	Group I	1.45	0.61	1.45	0.83	1.45	0.87	0.00	0.04
	Group II	1.45	0.56	1.45	0.78	1.45	0.82	0.00	0.04

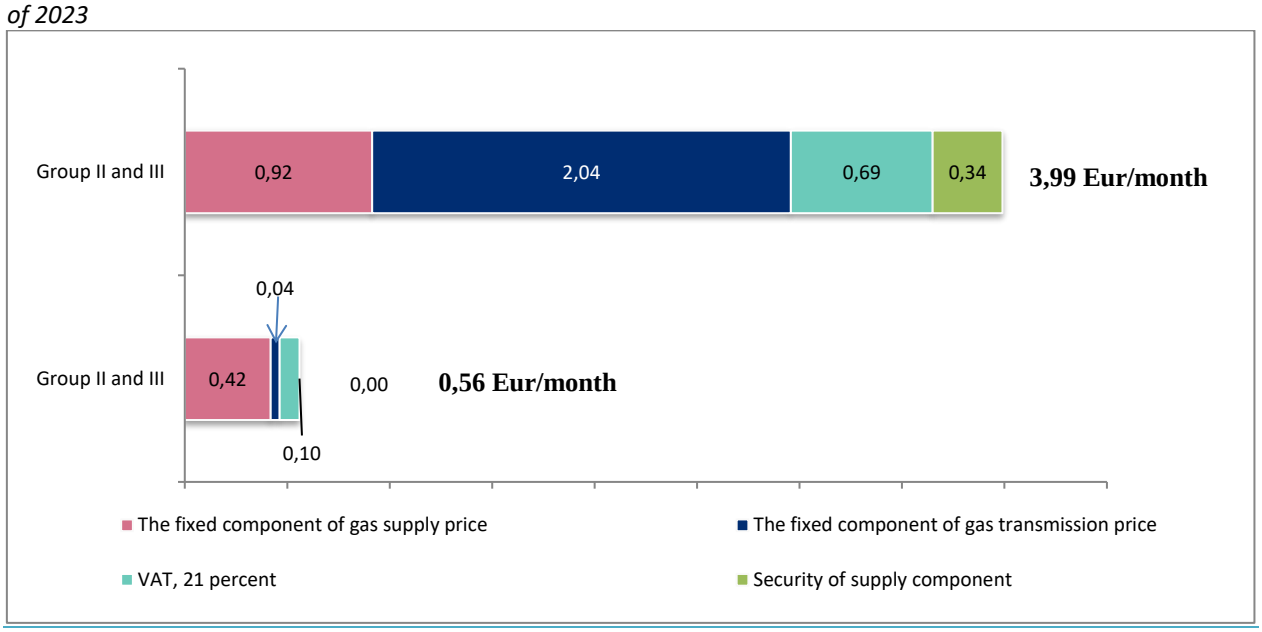
Source: NERC.

Fig. 26. Structure of the variable part of the natural gas tariff of UAB "Ignitis" for household consumers in the first half of 2023



Source: NERC.

Fig. 27. Structure of the fixed part of the natural gas tariff of UAB "Ignitis" for household consumers in the first half of 2023



Source: NERC.

A fixed monthly fee is paid to maintain the functionality of the gas system and to reserve power (securing of capacity) in the main pipelines, thus, ensuring that each consumer can receive a high-quality service at any time. The fixed fee also includes the costs of metering and the conclusion of contracts (supply price).

Competition and market: retail market

Table 17. *Retail market indicators (household consumers)*

Retail market indicators (household)	2016	2017	2018	2019	2020	2021	2022
Natural gas consumption, GWh	1,879	1,986	2,127	2,079	2,254	2,843	2,552
Number of consumers	566,200	575,314	587,570	595,253	602,978	609,740	613,337
Number of registered suppliers	4	4	4	4	4	4	4
Number of active suppliers	4	4	4	4	4	4	4
Market share of the three largest suppliers in terms of the number of measuring instruments	99.96	100.0	100.0	99.98	99.84	99.98	99.98
Number of suppliers with a market share of more than 5%	1	1	1	1	1	1	1
Number of suppliers with more than 5% of the market consumers	1	1	1	1	1	1	1
Share of consumers who have changed their supplier (allocated gas volume), %		0.09	0	0	0	0	0
Share of consumers who have changed their supplier (in terms of the number of measuring instruments), %		0.46	0	0	0	0	0
Duration of the change of a supplier established in legal acts	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks
Average duration of the change of a supplier	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of consumers paying in accordance with the regulated tariff	566,200	575,314	587,570	595,253	602,978	609,740	613,337
HHI by sales	9,972	9,981	9,979	9,978	9,968	9,962	9,965
HHI by the number of measuring instruments	9,899	9,992	9,992	9,991	9,991	9,988	9,988
Number of interruptions due to unpaid bills	0	0	0	3	10	12	20
Average price for a consumer consuming 9000 kWh per year, EUR/year	353	383	379	442	289	393	708

Source: NERC.

Table 18. *Retail market indicators (non-household consumers)*

Retail market indicators (non-household)	2016	2017	2018	2019	2020	2021	2022
Natural gas consumption, GWh	5,192	5,847	4,290	4,299	4,958	5,989	4,644
Number of consumers	6,959	7,168	7,380	7,732	7,458	8,150	7,819
Number of registered suppliers, units		40	33	23	30	36	51
Number of active suppliers, units		16	15	16	20	15	35
Market share of the three largest suppliers in terms of the number of measuring instruments	98.37	99.33	92.41	94.94	93.20	85.04	81.38
Number of suppliers with a market share of more than 5%, units	2	2	2	3	2	5	2
Number of suppliers with more than 5% of the market consumers, units	1	1	1	1	1	1	1
Share of consumers who have changed their supplier (allocated gas volume), %		0.22	6.76	10.68	16.80	24.67	28.00
Share of consumers who have changed their supplier (in terms of the number of measuring instruments), %		0.43	1.96	1.96	3.80	7.47	9.69
Duration of the change of a supplier established in legal acts	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks	3 weeks
Average duration of the change of a supplier	-	-	-	-	-	-	-
Number of consumers paying in accordance with the regulated tariff, units	0	0	0	0	0	0	0
HHI by sales	7,004	6,958	6,752	5,897	3,704	3,338	3,385
HHI by the number of measuring instruments	9,634	9,666	9,480	9,183	8,150	7,885	7,432

Source: NERC.

Monitoring of the retail natural gas market, Article 41(1)(i), (j), (k), (l) and (u) of Directive 2009/73/EC

NERC carries out scheduled inspections of regulated gas undertakings to determine their compliance with the set cost and price level. In 2022, NERC did not carry out scheduled inspections of regulated activities of natural gas undertakings.

- Consumer protection and dispute resolution

- Compliance with Annex I (Article 41(1)(o) of Directive 2009/73/EC)

In accordance with Article 4(3) of the Law on Energy, NERC, while performing the functions of regulation, supervision, and control of energy activities, ensures, within its remit, the implementation of state policy in the field of protection of consumer rights within the energy sector. Safeguards to protect consumers are set out in Article 57 of the Law on Natural Gas. No changes were made in 2022.

- Ensuring access to consumer data (Article 41(1)(q), Item (h) of Annex I of Directive 2009/73/EC)

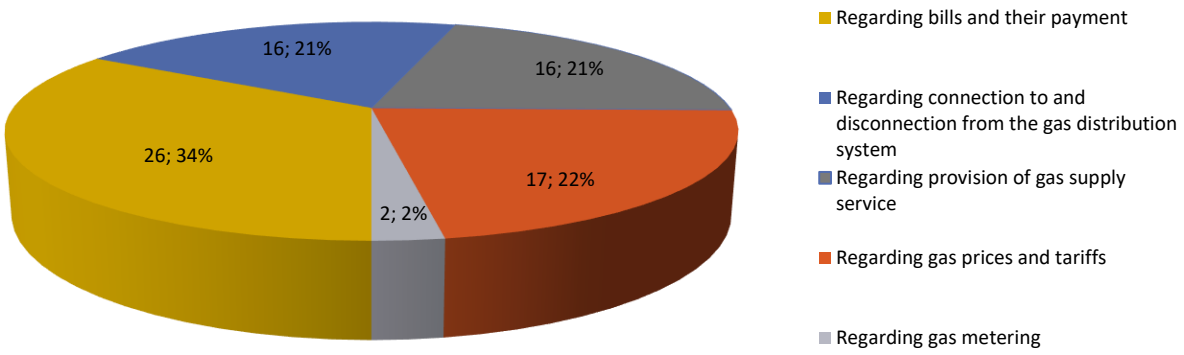
In 2022, the terms and conditions for access to consumer data remained mainly unchanged. In accordance with the legal regulation, natural gas consumers must be provided with adequate and sufficient conditions for access to information and data on actual energy consumption, payments for the amount of energy supplied to them, and/or services related to energy supply. Adequate and sufficient means of access are considered to consist of the submission of an invoice

to the consumer or electronic access to the consumer's payment data, or other reasonable means. Gas consumers are served through a self-service website www.e.ignitis.lt/.

- Article 41(11), (4)(e) of Directive 2009/73/EC

In 2022 m. as well as in 2021 m. the procedure for receiving and handling complaints remained the same, no changes were made. In 2022, NERC received and examined 77 applications. The distribution of received applications according to the nature of the application is shown in the figure below.

Fig. 28. Distribution (%) of applications within the gas sector received in 2022 according to the nature of the application



Source: NERC.

Table 19. Consumer protection indicators

Consumer indicators	2017	2018	2019	2020	2021	2022
Number of household consumers	575,314	587,570	595,253	602,978	609,749	613,337
Number of consumers to whom the guaranteed supply is provided	2,683	17	15	0	0	0
Number of calendar days established in legislation between the notice regarding the payment of a bill and disconnection	15	15	15	15	15	15
Number of consumers disconnected due to unpaid bills	0	0	3	10	12	20
Number of consumers subject to energy poverty	N/A	N/A	N/A	N/A	N/A	N/A
Number of consumers paying according to the social tariff	N/A	N/A	N/A	N/A	N/A	N/A

Source: NERC.

4.3. Security of supply

- Article 41(1)(t)

NERC is not responsible for establishing or implementing the necessary temporary safeguards measures required in the event of a sudden crisis in the energy market or the event of a threat

to the physical protection or safety of persons, or the security of equipment or installations or to the security of integrity of the system.

- Article 41(1)(h)

Quality of services

The Law on Natural Gas provides for the obligation of NERC to establish indicators for the quality, including reliability, of services of natural gas undertakings, and the procedure for assessing them.

In accordance with the Description of the Indicators of Reliability and Quality of Services Provided by Natural Gas Undertakings, the Procedure for Their Assessment approved by NERC, the minimum quality levels for each natural gas undertaking are set individually, for a specific price regulation period.

The main indicators of the quality of uninterrupted natural gas supply are SAIDI and SAIFI during the reporting period. The SAIDI and SAIFI indicators are differentiated according to the reasons for the interruption.

In July 2022, NERC found that the actual indicators of the quality of activities of AB “Amber Grid”, UAB “Intergas”, UAB “Gren Lietuva”, AB agrofirm “Josvainiai” and UAB “SG dujos” meet the minimum quality levels set for a particular gas undertaking.

1 factual indicator of the quality of activities of AB “Energijos skirstymo operatorius”, i.e. SAIFI, does not meet the minimum quality levels set for the specific gas undertaking. Accordingly, NERC has adjusted the return on investment set for AB “Energijos skirstymo operatorius” for natural gas distribution activities for 2021 by 2%.

- Monitoring of the balance of supply and demand

Every two years, after having consulted all the relevant stakeholders and taking into account the existing and forecast supply and demand, the TSO draws up and submits to NERC a 10-year network development plan in accordance with the procedure established by NERC. The network development plan shall contain efficient measures to ensure the adequacy of the system and the security of supply.

In May–June 2022, the Lithuanian TSO prepared and publicly consulted on the network development plan 2022–2031, which was made publicly available on the TSO website[18]. The network development plan for 2022–2031 includes the following infrastructure projects:

– Together with the Latvian gas transmission system operator, implement an increase in the capacity of the gas pipeline link between Lithuania and Latvia. The aim of the project is to ensure the security and reliability of natural gas supply, more efficient use of infrastructure and better integration of the Baltic gas markets and the functioning of the single market. The project is expected to be completed in 2023.

[18] https://www.ambergrid.lt/data/public/uploads/2023/02/desimties-metu-tinklo-pletros-planas-2022-2031.pdf

– 2023–2025, to carry out a pilot project to determine how to adapt the existing gas system to transport green hydrogen. From 2026, gradually adapt the gas transmission system infrastructure to transport a mixture of hydrogen and methane. Successful implementation of these projects will enable up to 10% of the natural gas system to be replaced by green hydrogen gas by 2030.

The plan also includes investments to develop, restore and modernise the transmission system. Some of them are financed by the EU structural funds.

Every year, the TSO and DSO also submit to NERC reports on the undertaking's annual activities and ensuring of security, specifying the volumes of gas planned to be transmitted, distributed, and transported in transit through the territory of the Republic of Lithuania to the system users during the current year and the following two years. The TSO provides summarised information on the use of the relevant points of the transmission system, indicating in percentage the maximum capacity utilisation per month for the reference period, compared to the technical capacity of the relevant points.

In recent years the volume of gas transported by transmission system to the need of Lithuanian market changes slightly every year.

Table 20. *Natural gas volumes to be transported through the transmission system in 2021–2024 (MWh)*

Exit point	**2021 fact**	**2022 fact**	**2023 target**	**2024 (forecast)**
Exit point of Kiemėnai	1,902,066	18,427,752	9,674,027	7,700,000
Domestic exit point	12,563,631	8,485,980	22,646,291	10,121,465
Domestic – Achema exit point	11,572,012	7,089,682		10,930,000
Exit point of Santaka	0	6,385,980	8,035,816	11,474,036
Exit point of Šakiai	26,693,104	23,399,125	26,269,950	26,000,000
Total quantity released	**52,730,813**	**63,788,519**	**66,626,084**	**66,225,501**

Source: NERC.

- Measures to cover peak demand or shortage of suppliers

Under the normal conditions of operation of the transmission system and supply to Lithuania, the peak gas consumption is fully satisfied. In the event of gas transmission disruption, the following measures would be used:

- system users who have concluded uninterrupted supply contracts with a supply undertaking have gas supplied from Inčiukalnis Underground Storage Facility;
- the priorities of natural gas supply and transportation and the sequence of curtailment and phase-out of gas supply are applied as set out in the natural gas transmission contracts with system users directly connected to the transmission system;
- supply undertakings must follow the instructions of the TSOs and DSOs, as stipulated in the National Natural Gas Supply Emergency Management Plan.

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