Litgrid

Electricity transmission system operator

STRATEGY 2030

SECURITY | INTEGRATION | TRANSFORMATION

The purpose of the Strategy document

The purpose of this Strategy document is to set long-term priorities, goals, measures, to form strategic and performance indicators, on the basis of which the Company will assess the efficiency of its activities in the short and long term period.

The strategy document provides the performance data of “Litgrid”, the projections and an objective view towards the changes in the environment and the changing market situation, identification of risks and their management measures, the principles for evaluation of our strategy, improvement and support which affect the long-term strategy of the Company.

We prepared the present Strategy document invoking the stakeholders that have a significant impact on the sustainable operation of the Company: consumers, producers/ suppliers, the founder, society and employees (stakeholders for each other). These elements are crucial in achieving the strategic and financial goals defined by the shareholder.

The success of implementing the objectives defined in the present document depends to a large extent on the requirements of relevant legal acts, also on the results of cost/ benefit analysis, feasibility and other related studies. The investment volumes are rated based on the information currently available to the Company, however, in the future the decision making can be shaped by changing circumstances and the need to maintain successful activity of the Company and the value created for stakeholders. The Strategy document is reviewed on an annual basis and updated as needed.

About “Litgrid”

SERVICES

- Transmission of high voltage electricity (110-400 kv)
- System reliability management services
- Balancing consumption and production
- Services of public interest

Customers of “Litgrid”

ELECTRICITY DISTRIBUTION NETWORK OPERATORS

ELECTRIC ENERGY PRODUCERS
connected to the transmission grid

ELECTRICITY CONSUMERS
their electrical devices are connected to the electricity transmission network and they purchase electricity for consumption

Imbalance and balancing ELECTRICITY SUPPLIERS

Reliable transmission of electricity in Lithuania

AIT – 0.21 min
Average interruption time due to the responsibility of “Litgrid”

ENS – 6.2 MWh
Energy not delivered due to the responsibility of “Litgrid”

6986 km
High voltage overhead lines

259 km
High voltage cables

“Litgrid” 2020

TRANSMISSION NETWORK

10 089 million kWh
transmitted

73 %
Employee engagement

236
Transformer substations and distribution facilities

INSTALLED POWER OF TRANSFORMERS:
400 kV – 768 MW
330 kV – 4450 MW
110 kV – 92.6 MW

FINANCE

53 million EUR
CAPEX

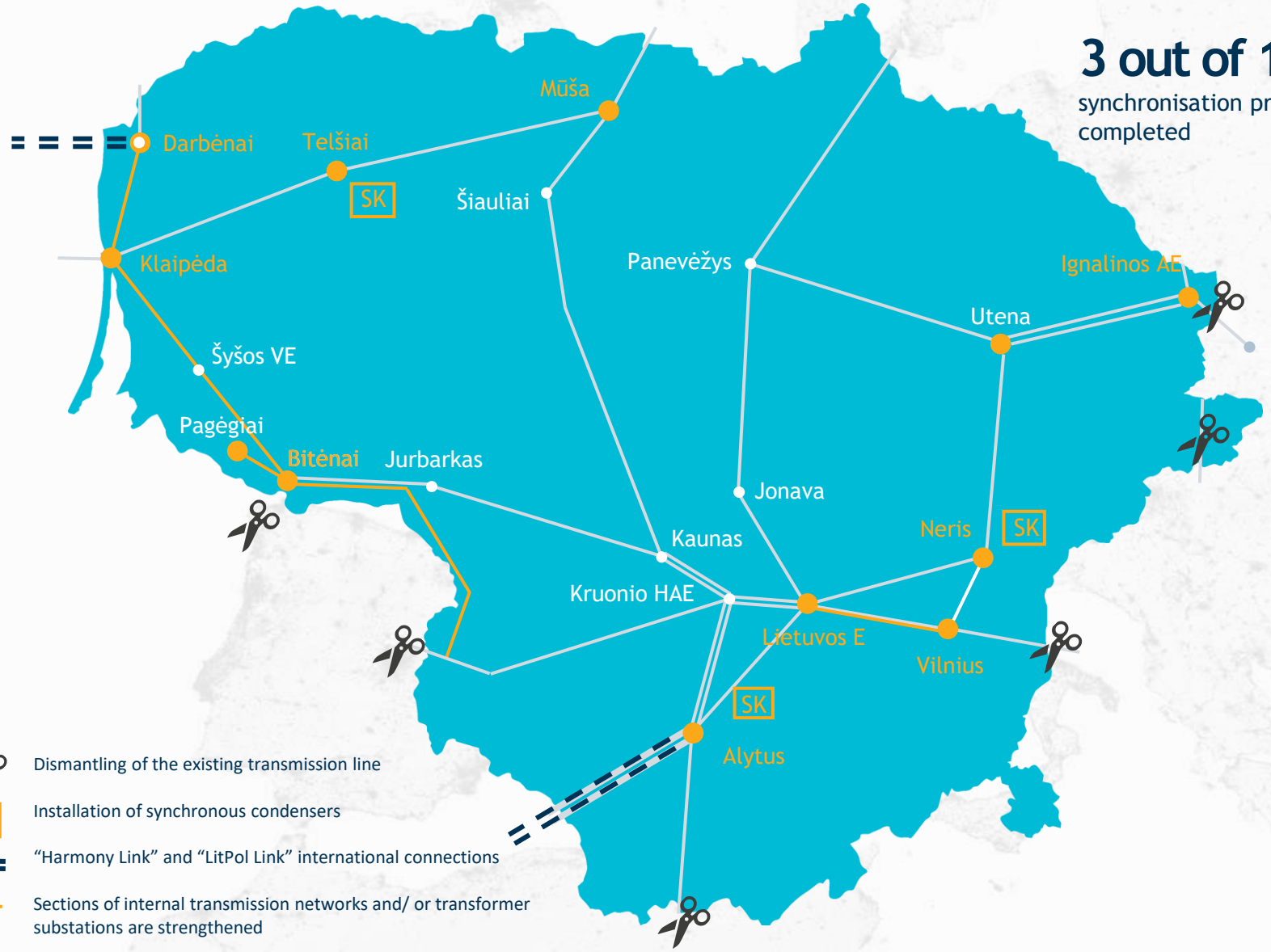
52 million EUR
EBITDA

13 %
ROE

208 million EUR

Towards energy independence

1. Strengthening Lithuanian gate to the West – expanding the LitPol Link interconnection and Alytus substation
2. Building the marine interconnection to Poland “Harmony Link”
3. Strengthening internal Lithuanian transmission grids
4. The foundation for network reliability: building synchronous compensators
5. Preparing to operate the frequency independently



3 out of 14
synchronisation projects completed

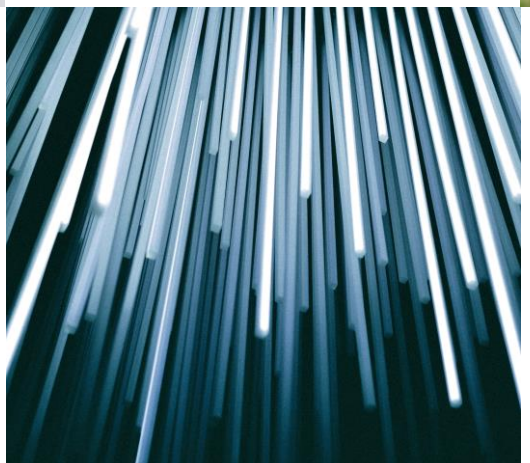
Why do we have to change?

Electricity producers

Digitalisation and technological convergence

Demographic changes

Globalisation and geopolitics



Environmental crisis

We strive for change with partners

In order to ensure the interests of the country and establish itself as a leader in its field within the Baltic region and Europe, we actively participate in national and international activities.

ENTSO-E

"Litgrid" is an active participant of the European Network of Transmission System Operators for Electricity (ENTSO-E), which brings together 42 electricity transmission operators from 35 countries.

Representatives of the Company participate, as permanent members, in the activities of ENTSO-E committees and working groups that at expert level prepare and discuss regulations, methodologies and other documents relevant for all the EU Member States, ensuring unified conditions of activity and regulations for European transmission grid operators. Participation in the activities of ENTSO-E, strengthening cooperation with other European transmission network operators is crucial for "Litgrid" in order to implement one of the priority tasks of the Lithuanian energy sector, i.e. the integration into the synchronous zone of the continental Europe.

BEMIP

The purpose of the Baltic Energy Market Interconnection Plan is to develop operating and integrated electricity and gas market, as well as to ensure the necessary energy infrastructure, by developing a competitive, sustainable, safe energy market in the Baltic Sea region.

The obligations of Lithuania to the BEMIP related to electric energy are implemented by "Litgrid" by means of projects facilitating integration into the synchronous zone of continental Europe, and putting in place the preparatory works for the development of offshore wind energy in Lithuania.

In 2020 "Litgrid" with other six transmission system operators in the Baltic Sea region signed a cooperation memorandum on the development of offshore wind energy in the region. The purpose of cooperation is to develop common principles for the planning of the Baltic Sea network, to include relevant regional projects in the ten-year ENTSO-E network planning documents and to conduct studies that would help to form a common vision for offshore wind network development in the region. This signed document is a very important step in order for the implementation of offshore wind projects planned in Lithuania to be efficient, technologically advanced, user-oriented and take advantage of the regional potential.

JAPANESE "TEPCO Power Grid"

To common goal of "Litgrid" together with TEPCO Power Grid is to apply the Baltic electricity transmission system model, under which 100 % of electricity is generated from RES (the goal of NENS is to produce 100 % of the electricity consumed in Lithuania from RES by 2050).

BRELL

There are five synchronous zones in Europe: the Nordic Area, IPS/UPS, continental Europe, the British and the Irish Area.

A synchronous zone is a geographic area in which power generators are connected and operate under the same frequency and at the same rhythm. Lithuanian energy system is currently synchronously operating within the IPS/UPS system of Belarusian, Russian, Estonian, Latvian and Lithuanian power ring (BRELL). BRELL is an agreement between national electricity transmission system operators regulating dispatcher control issues within their energy systems. The PSO of the Baltic States seek that BRELL decisions would be compliant with the provisions of the Directives of the European Union. The interests of the parties to BRELL are represented by Belenergo (Belarus TSO), SO EES, Rosseto and FSK EES (Russian TSO), Elering (Estonian TSO), Augstsprieguma tīkls (Latvian TSO) and "Litgrid". After connecting to the networks of continental Europe in 2025 the Baltic countries will desynchronize from the BRELL power ring.

EUROPEAN ENERGY INFORMATION SHARING AND ANALYSIS CENTRE

In 2020 "Litgrid" implemented the project "IMPLEMENTATION OF THE CRITICAL INFRASTRUCTURE DATA NETWORK MONITORING SYSTEM".

In order to share the acquired knowledge not only within the organisation, but also with international partners, the results created during the project will be disseminated in the formats of the European Energy Information Sharing and Analysis Centre. This will contribute to the implementation of the strategic goal of the Company - to be recognised as a professional in Europe - as well as to the growth of competencies of the specialists of the Company and the development of cooperation with foreign partners.

OTHER ASSOCIATIONS AT WHICH THE INTERESTS OF THE COMPANY ARE REPRESENTED:

- Lithuanian-Polish Commerce Chamber Association
- CIGRE
- National Lithuanian Energy Association (NLEA)

As a member of the above-mentioned associations, "Litgrid" maintains closer cooperation with regional and national partners, ensures the representation of the interests of the Company, more fluent implementation of strategic projects and communication on issues relevant to the Company with related parties.

HOW WILL WE CHANGE?

“Litgrid” is changing

The company perceives its activities as a platform business model whereby a highly reliable electricity transmission infrastructure enables the value-creating equivalent interactions between suppliers and consumers*.

We are creating a sustainable, transparent ecosystem based on uniform standards, facilitating exchanges between producers/ suppliers and consumers, and creating value for society by empowering sustainable energy choices and contributing to the competitiveness of the country.

Exchange platform levels:

TECHNICAL LEVEL –
efficient transmission grids;

COMMERCIAL LEVEL –
mature market;

VALUE LEVEL –
sustainable energy.

*Parker, Van Alstyne, Choudary “Platform revolution”, 2016.

Enable and encourage the platform participants to exchange electrical energy freely, to choose to produce or consume climate-neutral energy and obtain it at a competitive price **whenever needed and as much as needed**

Forecast for 2030

15 TWh

CONSUMPTION OF ELECTRICITY IN LITHUANIA WILL INCREASE ON AVERAGE BY

+1.9 % every year

Key stakeholders

Society

We perceive the society and its members not only as residents of the country or individual communities, but also as the environment, nature, fauna upon which the company has an impact

The activities of “Litgrid” are based on the principles of social responsibility, sustainable development, transparency and smart environmental protection. The performance of the Company is an integral and inseparable part of the successful functioning of the country. We seek to support the growth and the strength of the society in which we operate by mitigating the negative impact upon the environment and adjusting the transmission system for the decarbonisation of the energy sector.

Producers/suppliers

Segments: energy producers, suppliers and producing consumers.
Furthermore, the contractors, technical suppliers and the transmission system operators of other states.

Energy producers and suppliers are participants of the electricity exchange platform ensuring proper supply.
The contractors and other partners of the Company contribute to the implementation of strategic projects and goals.

Founder

The founder of the Company is the State, the interests of which are represented and the expectations are formulated by the Ministry of Energy of the Republic of Lithuania and implemented under the control of EPSO-G.

The expectations of the country are reflected in the agendas of our shareholders - close cooperation is necessary to ensure the formation of a coherent and long-term vision of the energy sector and the smooth implementation and sustainable return from a range of initiatives implemented on national and regional levels.

Users

Energy distribution operators, public suppliers, suppliers, heat producers and industry consumers.

The companies of the Group cooperate in the manner of B2B (business-to-business). That is a supply building group of platform participants.

Employees (for each other)

All employees of the Company.

Experienced, competent and value-driven professionals constitute the essential prerequisite for achieving strategic goals and priorities.

Commitments of “Litgrid”

MISSION

We enable sustainable and efficient exchange of electricity

PROFESSIONALISM | COOPERATION | PROGRESS

USERS

Focus on consumer expectations and provision of innovative services

PRODUCERS/ SUPPLIERS

Becoming a desirable partner of open data, flexible services and the most reliable infrastructure

SOCIETY

Act in socially responsible as well as safe manner and reduce the impact of our activities upon the environment

FOUNDER

Develop a sustainable value and implement strategic objectives

FOR EACH OTHER

Become a recognised professional in Europe and one of the most-desired employers in Lithuania, valued and recommended by the employees

Priorities of “Litgrid”

VISION

The most advanced electricity system operator in Europe

USERS

Create customer-focused organisation, based on innovative services to meet customer expectations

PRODUCERS/ SUPPLIERS

Develop the market and the infrastructure sustainably

SOCIETY

Reliable and high-quality electricity transmission in Europe with a purposeful reduction of environmental impact

FOUNDER

A competitive and reliable partner implementing the NEIS objectives

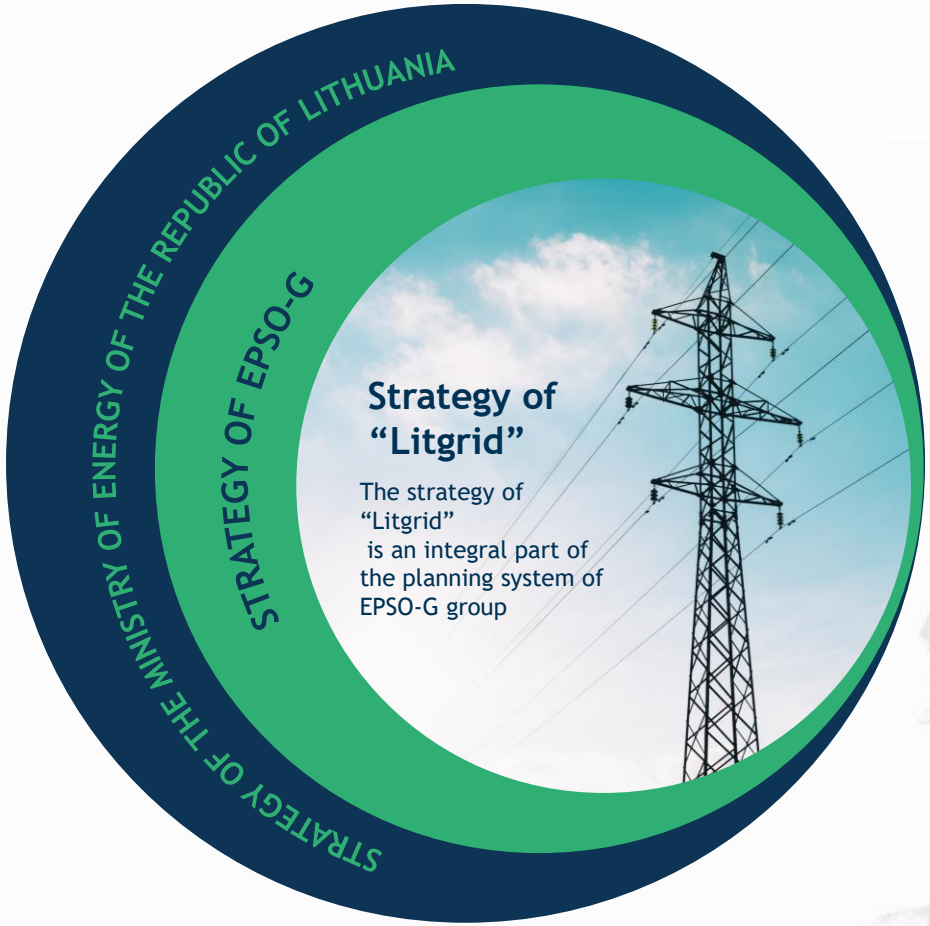
FOR EACH OTHER

Constantly evolving team of professionals that we are proud of

WHAT RESULTS DO WE EXPECT?

Long term planning 2020 - 2050

WE HELP IMPLEMENT THE ENERGY EVOLUTION IN LITHUANIA



1 **Synchronization with CEN** — 2020 / 2025

2 **Renewable resources in the Baltic Sea integration** — 2027

3 **Transport electrification*** — 2029

4 System integration — After 2030

NATIONAL GOALS

	2030	2050
Share of renewables in final energy consumption	45%	80%
Share of renewables in the electricity sector	45%	100%
Share of renewables in the transport sector	15%	50%

EU GOALS

Clean energy at affordable price

	2030
CO2 emission decrease compared to 1990	50-55%
Share of renewables in final energy consumption	32%
Increase of energy efficiency	32,5%

* the infrastructure is prepared for the Lithuanian railway electrification in 2023 - 2026

Strategic KPIs of “Litgrid” for 2030

STRATEGIC KPIS of “Litgrid” for 2030

Users

Growth in customer experience appreciation, according to the survey in 2021 in comparison to the defined target objectives

0
instances of RES supply transmission to the grid restrictions because of breach of legal acts and/ or the terms of connection contracts

AIT ≤ 0.29 MIN
(average interruption time)

ENS ≤ 6.3 MWH
(energy not served)

Average energy transmission price for LT needs ≤ average region (LV, EE, FI, PL, SE)

≤ 2 EUR/ MWH
difference in wholesale prices compared to LV, SE4, PL price zones

GIC KPIS of “Litgrid” for 2030

Producers/ suppliers

GROWTH IN CUSTOMER EXPERIENCE
appreciation, according to the survey in 2021 in comparison to the defined target objectives

GROWTH IN OPEN DATA MATURITY LEVEL, according to the survey in 2021 in comparison to the defined target objectives

STRATEGIC KPIs of “Litgrid” for 2030

Society

Environmental impact reduction

according to the assessment of 2021 in comparison to the defined target goals

0

material environmental incidents

STRATEGIC KPIs of “Litgrid” for 2030

Founder

2025
Transmission grid prepared to be synchronised with CEN

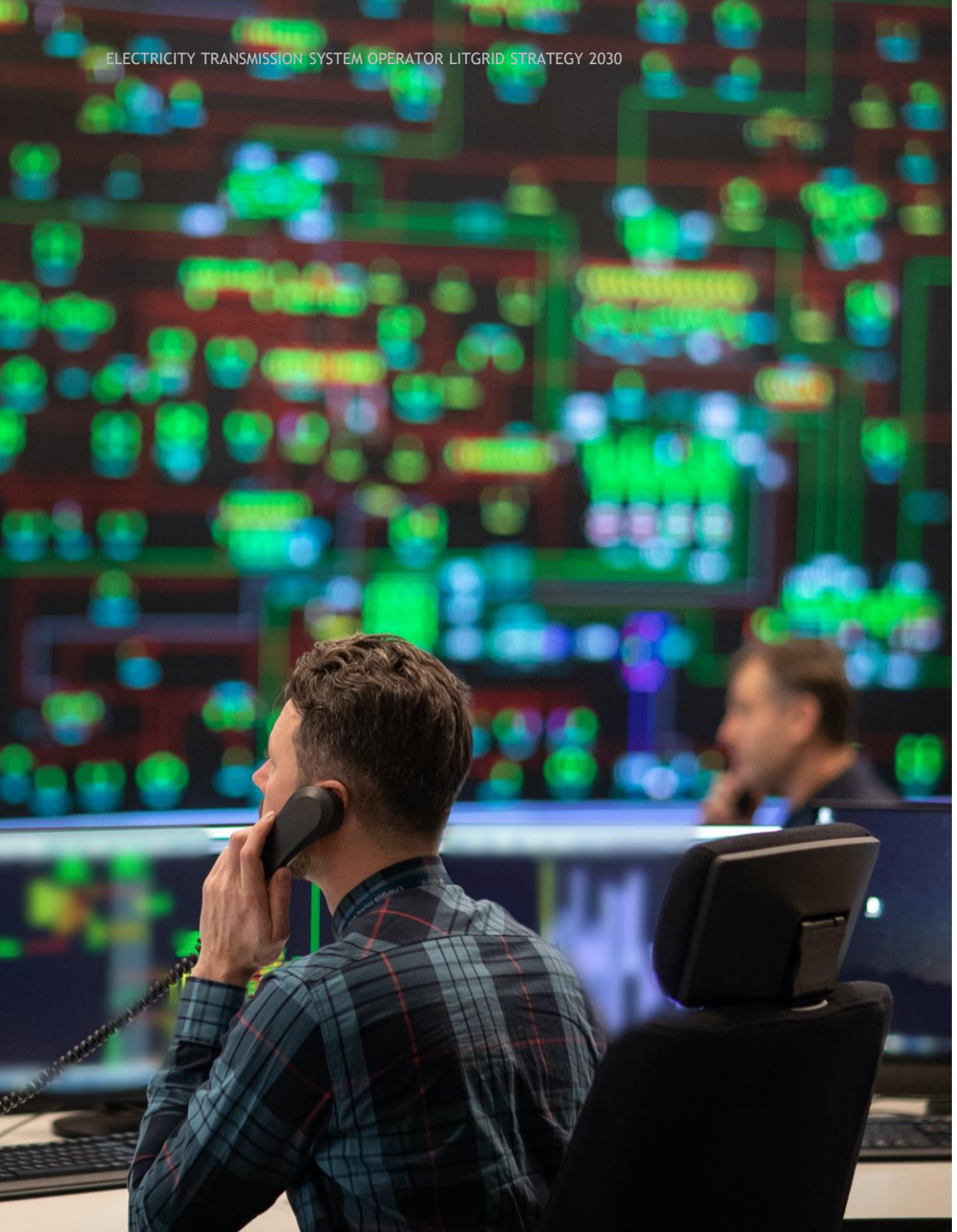
≥ 2
implemented intersectoral system integration projects

ROE ≥ 6.3 %
2024-2030 average

OPEX set by the regulator has not been exceeded

90-100 %
CAPEX

≤ 2.80 EUR per year
network recovery and maintenance costs per 1 MWh



STRATEGIC KPIs of “Litgrid” for 2030

For each other

0
severe or fatal accidents at “Litgrid” sites when operating, reconstructing or building new electric transmission grids

≥ 15
accomplished break-through and/or radical innovations

≥ 75 % employee engagement

Innovation ecosystem

INNOVATIONS IMPLEMENTED BY THE UNITS (typical implementation duration 0-2 years)

65 %

Small-scale

Improving existing products and services using existing or known technologies

INNOVATIONS BY DIFFERENT UNITS (typical implementation duration 2-5 years)

20 %

Break-through

Large-scale and high-impact changes to existing products and services

COOPERATION WITH RESEARCH INSTITUTES (typical implementation duration 5-10 years)

15 %

Radical

New products and services that open up new areas of business or markets

INNOVATION DIRECTIONS:

Advanced and efficient asset management

Advanced and efficient system management and monitoring

ITT and digitalisation

Business organization and new services

TO HEAR | TO EXPLORE | TO IMPLEMENT

KPIs of “Litgrid” for 2030

THE BENEFITS OF IMPLEMENTING THE STRATEGY ARE ENSURED

USERS

Growth in customer experience appreciation, according to the survey in 2021 in comparison to the defined target objectives

AIT≤ 0.29 MIN

ENS ≤ 6.3 MWH

0 instances of RES supply transmission to the grid restrictions because of breach of legal acts and/ or the terms of connection contracts

≤ 2 EUR/ MWH
difference in wholesale prices compared to LV, SE4, PL price zones

Average energy transmission price for LT needs ≤ average region (LV, EE, FI, PL, SE)

PRODUCERS/ SUPPLIERS

Growth in customer experience appreciation, according to the survey in 2021 in comparison to the defined target objectives

Growth in open data maturity level, according to the survey in 2021 in comparison to the defined target objectives

SOCIETY

Environmental impact reduction
according to the assessment 2021 in comparison to the defined target goals

0
material environmental incidents

FOUNDER

2025
Transmission grid prepared to be synchronised with CEN

≥ 2
implemented intersectoral system integration projects

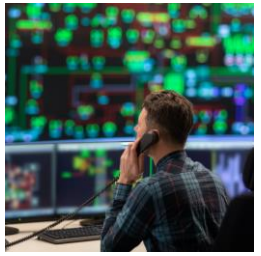
ROE ≥ **6.4 %**

OPEX set by the regulator has not been exceeded

90-100 % CAPEX

≤ €2.80 per year
network recovery and maintenance costs per 1 MWh

EACH OTHER



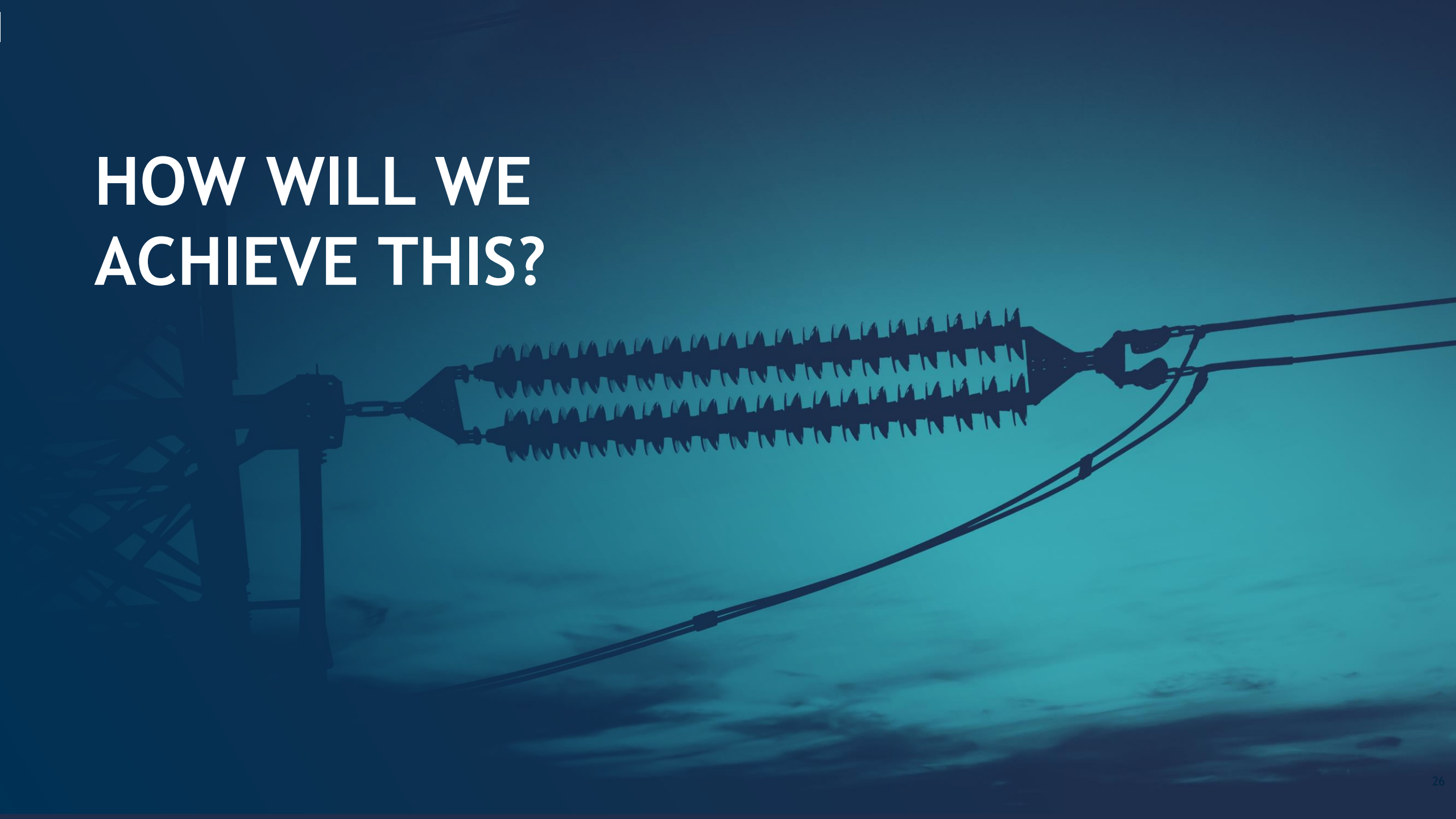
0 severe or fatal accidents at “Litgrid” sites when operating, reconstructing or building new electric transmission grids

≥ 15
accomplished break-through and/ or radical innovations

≥ 75 % employee engagement

Freedom of choice: we enable sustainable and efficient exchange in electricity

HOW WILL WE ACHIEVE THIS?



We perceive a reduced environmental impact as:

1

TRANSPARENCY OF THE ACTIVITIES OF THE COMPANY, NON-DISCRIMINATORY, CONSCIOUS AND SOCIALLY RESPONSIBLE DECISION-MAKING AND DECISION AVAILABILITY TO THE PUBLIC

2

MAXIMUM REDUCTION OF EQUIPMENT EXPOSURE

3

RENEWABLE ENERGY INTEGRATION

4

DECREASED ENVIRONMENTAL IMPACT WHEN PLANNING OPERATIONS AND ASSESSING THEIR IMPACT, ALSO ADAPTING THE EXCHANGE PLATFORM FOR THE DECARBONISATION OF THE ENERGY SECTOR

5

CREATION OF AN ENERGY-SAFE STATE, ENSURING ENERGETIC INDEPENDENCE OF LITHUANIA BY SYNCHRONIZING THE LITHUANIAN ELECTRICITY SYSTEM WITH THE CONTINENTAL EUROPEAN ELECTRICITY SYSTEM

6

ZERO TOLERANCE FOR:

- JUSTIFIED RECURRENT COMPLAINTS REGARDING THE LIABILITY OF “Litgrid” OR ACTIONS OF THE CONTRACTORS
- SIGNIFICANT ENVIRONMENTAL INCIDENTS AT “Litgrid” SITES

We will create a customer-oriented organization

We will strive to create a sustainable, transparent ecosystem, enabling efficient electricity exchange for all market participants

VALUE PROPOSAL TO PRODUCERS AND SUPPLIERS:

1. Market opportunities
2. Transparency
3. Speed

VALUE PROPOSAL TO USERS:

1. Reliability
2. Choices
3. Transparency
4. Competitive price

We will implement digital transformation

Electricity transmission systems are going through a time of transformation, as technologies and innovations change the traditional model and attitudes towards generation sources as well as their management methods

New trends and innovations are linked to major sectors of the economy, such as transport or heating, electrification, energy efficiency, decentralization (small grid connection) and digitalization - equipment automation, deployment of smart metering systems and other grid digitalization solutions and network management, data storage in remote information repositories (cloud technologies).

All that enables not only the development of intelligent transmission system management, but also the integration of electricity consumers into network management, electricity consumers could be notified in advance in order to encourage them to become active market participants.

2022
A fully operational EnergyTech platform

2023
“Litgrid” business process automation concept

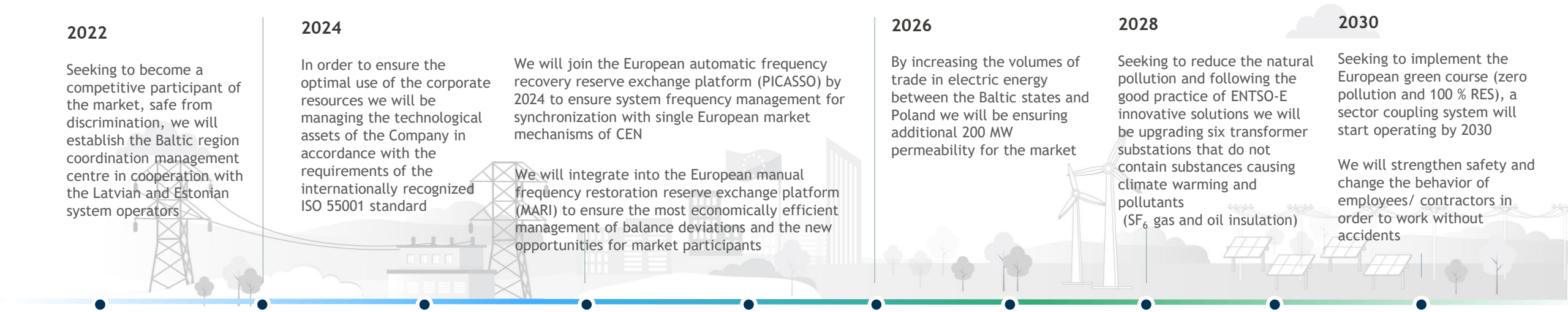
2024
Integrated relevant **“Litgrid”** and consumer IT systems

2025
“Litgrid” is a company that quickly responds to the changing environment and is the centre of excellence in energy, since analytical self-service tools are used to model business insights

2026
Data-driven organization

2027
Data driven ecosystem

Main results for stakeholders



2022

Seeking to become a competitive participant of the market, safe from discrimination, we will establish the Baltic region coordination management centre in cooperation with the Latvian and Estonian system operators

2024

In order to ensure the optimal use of the corporate resources we will be managing the technological assets of the Company in accordance with the requirements of the internationally recognized ISO 55001 standard

We will join the European automatic frequency recovery reserve exchange platform (PICASSO) by 2024 to ensure system frequency management for synchronization with single European market mechanisms of CEN

We will integrate into the European manual frequency restoration reserve exchange platform (MARI) to ensure the most economically efficient management of balance deviations and the new opportunities for market participants

2026

By increasing the volumes of trade in electric energy between the Baltic states and Poland we will be ensuring additional 200 MW permeability for the market

2028

Seeking to reduce the natural pollution and following the good practice of ENTSO-E innovative solutions we will be upgrading six transformer substations that do not contain substances causing climate warming and pollutants (SF_6 gas and oil insulation)

2030

Seeking to implement the European green course (zero pollution and 100 % RES), a sector coupling system will start operating by 2030

We will strengthen safety and change the behavior of employees/ contractors in order to work without accidents

2021 **2025** **2030**

2021

For the purpose of implementing the measure plan of the government of the Republic of Lithuania designed to protect from the unsecure nuclear power plant in Astravas, we will develop the concept of certificates of origin of electricity

2023

By cooperating with AB “Amber Grid” we will implement a water electrolysis pilot project (power to gas)

In 2023-2025 we will prepare the electricity transmission system for the integration of the Lithuanian electrified railway

2025

Ensuring the energy independence of Lithuania, the electricity system of the Republic of Lithuania will be prepared for interconnection with continental European electricity network for synchronous operation

Furthermore, we will implement the power and heat sector integration project (power to heat)

We will ensure the efficiency and reliability of the network to become one of the TOP5 European operators with the biggest share of sun and wind energy in the final consumption balance

2027

We will prepare electricity transmission system for a 700 MW Baltic offshore wind farm integration

2029

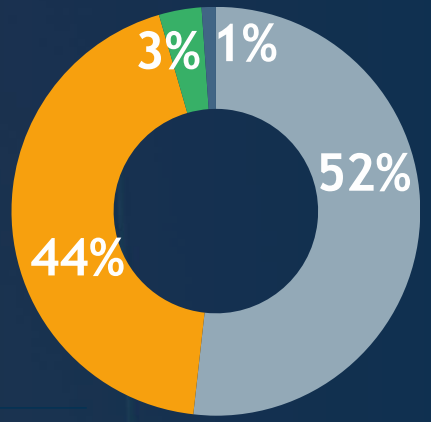
We will implement the globally justified initiative decisions regarding the further development of the use of the Baltic Sea offshore wind (multi-terminal offshore hub)

Financial forecasts

Investment – 1.38 billion EUR

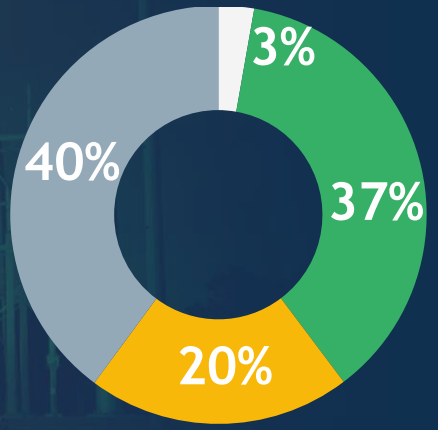
The priority of investment financing is to minimize the burden on network users

Arguably being the largest investor in Europe we will seek to ensure that the electricity transmission tariff does not exceed the tariff of other Baltic countries



Investment 2020 - 2030

- Synchronization with Continental European Network
- Grid restoration and new construction
- Initiative of grid users
- ITT and other projects



Investment funding sources 2020 - 2030

- Funds of grid users
- EU grants
- Proceeds for the overload
- Own and borrowed funds

Abbreviations

RES	Renewable energy sources
AIT	Average interruption time
ENS	Energy not supplied/ delivered
ROE	Average annual return indicators
EBIDTA	Earning before interest, taxes, depreciation and amortisation
CAPEX	Investment/ capital investment
OPEX	Operating expenses
EE	Estonia
LV	Latvia
PL	Poland
SE	Sweden
FI	Finland
SE4	The fourth wholesale electricity price zone in Sweden
EU	European Union
Power to heat	Electric energy conversion to heat energy
Power to gas	Water electrolysis

NENS	National Energy Independence Strategy
KET	Continental European Network
CIGRE	International Council on Large Electric Systems
ENTSO-E	European Network of Transmission System Operators – electricity)
IPS/UPS	Interconnected Power System/Unified Power System)
BEMIP	Baltic Energy Market Interconnection Plan)
BRELL	Agreement between the Transmission System Operators of Belarus, Russia, Estonia, Latvia and Lithuania regulating the coordination of actions between BRELL members - TSO - on the issues of operational planning and technological management of electricity systems
DATA HUB	Data accumulation and exchange platform
IPS/UPS	Synchronously operating electricity system between the Baltic States and the Commonwealth of Independent States
CEF	Connecting Europe Facility
TSO	Transmission system operator(s)

ITT	Information technologies and telecommunications
TP	Transformer substation
SF_6	Sulphur hexaflouride
Co_2	Cardon dioxide
kV.	Kilovolt
kW.	Kilowatt
MWh.	Megawatthour
TWh.	Teravarhour
km.	Kilovolt
min.	Minutes


Litgrid
SECURITY | INTEGRATION | TRANSFORMATION
#smartestTSO