LIMETED ACCESS

Ministry of Economics of Latvia

RISK-PREPAREDNESS PLAN FOR THE ELECTRICITY SYPPLY

In accordance with Regulation (EU) 2019/941 of the European Parliament and of the Council of 5 June 2019 on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC

Rīga 2021

Content

ABBREVIATIONS

DSO	Distribution System Operator
ECG	Electricity Coordination Group, set by a European Commission Decision of 15 November 2012 as a forum in which to exchange information and foster cooperation among Member States, in particular in the area of security of electricity supply
ICT	Information and communication technology
REN	Renewable energy sources
LNG	Liquefied natural gas
ENTSO-E	European Network for Transmission System Operators for Electricity
NC ER	Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration
PUC	Public Utilities Commission (Regulator)
TSO	Transmission System Operator
Blackout	Power system state in which the operation of part or all of the transmission system is terminated
SECC	State Energy Crisis Center
BRELL	Unified electricity supply system of Belarus, Russia, Estonia, Latvia and Lithuania

List of the legal acts

1. Energy Law – entry in force on 6 October 1998 (Publication: Latvijas Vēstnesis, 273/275, 22.09.1998)

2. Electricity Market Law – entry in force on 8 June 2005 (Publication: Latvijas Vēstnesis, 82, 25.05.2005)

3. National Security Law – entry in force on 12 January 2001 (Publication: Latvijas Vēstnesis, 473/476, 29.12.2000)

4. Law on Emergency Situation and State of Exception – entry in force on 10 April 2013 (Publication: Latvijas Vēstnesis, 61, 27.03.2013)

5. Mobilisation Law – entry in force on 1 January 2005 (Publication: Latvijas Vēstnesis, 91, 18.06.2002)

6. Civil Protection and Disaster Management Law – entry in force on 1 October 2016 (Publication: Latvijas Vēstnesis, 100, 25.05.2016)

7. Order of the Cabinet of Ministers of 26 August 2020 on the State Civil Protection Plan.

8. Decision No.1 / 4 of the Council of the Public Utilities Commission of 26 June 2013 on the Network Code for the electricity sector

9. Regulations No 508 of the Cabinet of Ministers of 06 July 2021 on critical infrastructure, incl. European level, procedures for planning and implementing identification, security measures and business continuity

10. Regulations No 312 of the Cabinet of Ministers of 19 April 2011 on Procedures for the Supply of Energy Users and Sale of Heating Fuel During Declared Energy Crisis and in Case of Endangerment to the State

11. Regulations No 50 of the Cabinet of Ministers of 21 January 2014 on Regulations Regarding the Trade and Use of Electricity

12. Regulations No 40 of the Cabinet of Ministers of 29 January 2002 on the State Energy Crisis Centre

13. Regulations No 42 of the Cabinet of Ministers of 18 January 2011 on the Crisis Management Council

14. Regulation (EU) 2019/941 of the European Parliament and of the Council of 5 June 2019 on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC

15. Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (REMIT).

16. Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration

17. Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation

1. GENERAL INFORMATION

Ministry of Economics has been designated as the Competent authority in Latvia according the Regulation (EU) 2019/941 of the European Parliament and of the Council of 5 June 2019 on risk-preparedness in the electricity sector and repealing Directive 2005/89/EC (the Regulation).

According to the Article 10 of the Regulation the Competent authority of each Member State shall elaborate risk-preparedness plan based on the regional and national electricity crisis scenarios identified pursuant to Articles 6 and 7.

The risk-preparedness plan shall consist of national measures, regional and, where applicable, bilateral measures as provided for in Articles 11 and 12. In accordance with Article 16, all measures that are planned or taken to prevent, prepare for and mitigate electricity crises shall fully comply with the rules governing the internal electricity market and system operation. Those measures shall be clearly defined, transparent, proportionate and non-discriminatory. The risk-preparedness plan shall be developed in accordance with Articles 11 and 12 and with the template set out in the Annex. If necessary, Member States may include additional information in the risk-preparedness plan.

In addition to the national measures referred to in Article 11, the risk-preparedness plan shall include regional and, where applicable, bilateral measures to ensure that electricity crises with a cross-border impact are properly prevented or managed.

The Ministry has considered that regional measures could include measures in the Baltic electricity system operation region in which other Member States are Estonia and Lithuania. At the same time, it should be noted that the Baltic energy system is part of the unified electricity supply system of Belarus, Russia, Estonia, Latvia and Lithuania (BRELL), while the Baltic electricity market is part of the Nordic-Baltic electricity market (Nordpool). These circumstances have also been considered in drawing up this plan.

2. SUMMARY OF THE NATIONAL ELECTRICITY CRISIS SCENARIOS

According to the Article 7 of the Regulation the competent authority shall identify the most relevant national electricity crisis scenarios.

The Ministry of Economics has identified 16 national crisis scenarios in cooperation with JSC "Augstsprieguma tīkls"-TSO (hereinafter – AST), JSC "Sadales tīkls"-DSO (hereinafter - ST), JSC "Latvenergo" - main electricity producer in Latvia (hereinafter – Latvenergo), JSC "Conexus Baltic Grid" – TSO (gas) and Latvian Association of Power Engineers and Energy Constructors.

The national scenarios are consistent with the regional crisis scenarios identified by ENTSO-E. Only one crisis scenario - disconnection from the IPS / UPS system has been identified as a distinctive scenario and proposed from AST. This risk has been identified in the process of preparation for the desynchronization from IPS/UPS system and follows from the conducted studies and relevant conclusions.

A summary of the scenarios is as following:

1) Cyberattack - entities connected to electrical grid

Description	A situation where the originator of a cyber-attack can enter one or more critical ICT systems of the TSO, the DSO, power plants or their operators. The originator of a cyber-attack is able to act as a member of staff working with the systems – can switch lines/transformers, change the settings – load, frequency, set reserve capacity and manipulate the TSO's schedules in respect of market partners or other TSOs
Impact on system	Risk of blackout due loss of control over equipment in power plants and substations, power system in general Impact on neighboring countries Overloading of transmission lines and cross-sections leading to separation of power systems, risk of blackout

2) Cyberattack – entities not connected to electrical grid

Description	Originator of a cyber-attack can enter one or more ICT systems that are vital for market participants. The originator of a cyber-attack is able to act as a member of staff working with the systems: can manipulate market conditions, offers and information, and power plant control systems.
Impact on system	Risk of imbalance causing high unscheduled flows, overloading transmission lines and interconnectors Impact on neighboring countries Overloading of transmission lines and cross-sections leading to separation of power systems, risk of blackout.

3) Physical attack - critical assets

Description	Critical assets in the TSO‘s or the DSO‘s network as well in electricity producer’s side is damaged by a physical attack, coordinated attack to destroy long-supply equipment in substations, electricity lines and equipment in power plants
Impact on system	It may result as blackout in case of coordinated attack to critical equipment (long term to replacement) or transmission lines elements Impact on neighboring countries It may lead to reduced capacity of crossections, unavailability of interconnectors

4) Insider attack

Description	A situation where an employee or subcontractor of the utility takes over control over the energy system, can act as a shift engineer and change the main system parameters or destroy valuable assets.
Impact on system	Impact on system depends on intrusion level. Intrusion on high hierarchy level may lead to system blackout Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

5) Storm

Description	A situation where components of the electricity infrastructure are damaged by strong gusts of wind or thunderstorm.
Impact on system	Disconnection of transmission lines, unavailability of generation units due isolation from the grid. Risk of blackout. Reduced system balancing capability. Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

6) Cold spell

Description	A situation where outdoor temperature is 10-20 degrees below the seasonal average temperature and due to the weather conditions, some components of the network or power plants are affected and power system reliability may be reduced. Availability of REN generation limited. High

	dependency on electricity import and availability of conventional power plants. High consumption of gas from gas storages and LNG terminals (In case of cold spell consumption in Latvia and Baltics region can be high reaching limits of supply. The scenario may materialize if the weather in the Baltics, the Nordic countries and Poland is exceptionally cold in winter. Thus, not all countries can rely heavily on electricity imports at once. Consumption will increase beyond the available production capacity of power plants.
Impact on system	Increased demand for electricity due to cold weather, affected availability of generation (operational problems of the plants), decreased production capability on hydro power plants, reduced network reliability due operational issues on transmission network elements. Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

7) Winter incident

Description	A situation where a very heavy snowfall or icing occurs which may cause disconnection of a number of network elements.
Impact on system	Disconnection of transmission lines, unavailability of generation units due isolation from the grid. Risk of blackout. Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

8) Multiple failures caused by extreme weather

Description	A situation where extreme weather conditions result in multiple failures of the electricity infrastructure components.
Impact on system	Disconnection of transmission lines, unavailability of generation units due isolation from the grid. Risk of brownout or blackout. Impact on neighboring countries Overloading of transmission lines and crossections leading

	to separation of power systems, risk of blackout.

9) Heatwave

Description	Prevailing hot weather in the country affects the security of supply (cooling systems failures/low efficiency of network elements etc.)
Impact on system	Reduced availability of hydro resources due low inflow, increased demand for electricity for air conditioning needs, reduced generation due to limited cooling capacities in thermal power plants, reduced generation due to limited transmission capacities in transmission and distribution systems, extremely low generation by wind power plants, reduced imports/transmission capacities due to thermal restrictions on transmission lines, limited import capacities, risk of forest fires affecting transmission lines. Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

10) Pandemic

Description	Due to a pandemic, employees of the TSO, DSO or power plants are infected, and a shortage of staff is experienced, unavailability of spare parts due interrupted supply chain
Impact on system	Reduced availability of operational staff in control centers, power plants. Affected availability of generating units and network elements due delayed maintenance or not delivered spare parts or components, limited availability of subcontractors (maintenance), travel arrangements. Impact on neighboring countries Above mentioned impact

11) Shortage of the natural gas supply

Description	Disruption in the natural gas delivery, a technical error in the natural gas supply system or switching off of the natural gas supply system for technical reasons or due to sabotage.
Impact on system	In some periods of time, the unavailability of natural gas can lead to insufficient generation and high dependence on electricity imports.

	Impact on neighboring countries At the regional level, this may necessitate the introduction of consumption restrictions. Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

12) Unwanted power flows

Description	Large-scale uncoordinated energy flows are recorded. They may arise due loss of generation sources or interconnectors, to increased production from renewable energy sources (wind, sun) or other external conditions
Impact on system	Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout. Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

13) Loss of ICT systems for real-time operation

Description	A situation where a large part of telecommunications infrastructures used in the power system or electricity market or of ICT systems used in the planning and use of electricity are lost; a real-time loss or unavailability due to technical failure.
Impact on system	Risk of blackout due loss of control over equipment in power plants and substations, power system in general Impact on neighboring countries Overloading of transmission lines and crossections leading to separation of power systems, risk of blackout.

14) Simultaneous multiple failures

Description	A disconnection of a number of power plants with the total capacity of power exceeding N-1 occurs; failures of substations or transmission lines as a result of which power supply to consumers can be disrupted, where risk for the system cannot be determined due to improper functioning of measurement/monitoring equipment and due to a short-circuit.
Impact on system	Risk of blackout Impact on neighboring countries Overloading of transmission lines and crossections leading

	to separation of power systems, risk of blackout.

15) Sudden desynchronization of Baltic power systems from IPS/UPS synchronous area

Description	Force majoure situation leading to island operation of Baltic power systems
Impact on system	Sudden desynchronization can cause the system to become unstable, making it more vulnerable. The condition of the system will depend directly on the balance between consumption and generation in the system. In case of limited availability of generation or HVDC interconnectors, automatic or preventive (manual) load shedding may be required. In combination with other deteriorating conditions, it can lead to system blackout. Impact on neighboring countries Similar to above mentioned impact

16) Lasting operational outage of Daugava HPP

Description	Physical attack on one of the Daugava HPP. Destroyed water dam (at least one water overflow way), losing of water level, influence on downriver HPP, Unfavorable climatic conditions (high rainfall in combination with a rapid rise in temperature during the spring day (if there is a large amount of snow and it melts very intensively) and significant drop during the night) cause disoperation of hydropower plant`s dam equipment.
Impact on system	Lasting out of operation of Daugava cascade (some months or years). Lack immediately of operational reserve particularly in case of a following next large generation unit outage in the Baltic region. The Baltic TSOs will face Reduced system balancing capability. In long run disconnection from UPS/IPS systems could occur as a result because a contractual obligation to the Russian system operator to keep the imbalance. After 2024 a similarly Baltic power systems could be disconnected from synchronous operation with Europe. Prolonged operation without the support of the Russian or European electrical system weakens the system. Frequency and voltage could go out of standards. Short or long-term restrictions on Latvia power consumption will be needed in the event of additional accidents at generation side.

3. ROLES AND RESPONSIBILITIES OF THE COMPETENT AUTHORITY

Roles and responsibilities of the Ministry of Economics as the competent authority pursuant to the Regulation are:

- Issuing an early warning and declaration of an electricity crisis.
- Providing the ECG and the Commission with an ex post evaluation report within three months after the end of an electricity crisis.
- Organizing electricity crisis simulations in cooperation with transmission operators and other relevant stakeholders.
- Updating national electricity crisis scenarios every four years.

The bodies responsible for the implementation of the risk preparedness plan are the Cabinet of Ministers, the Ministry of Economics, the PUC, AST, ST and Latvenergo. The obligations of the responsible structures and energy supply companies are specified in the Energy Law, the Electricity Market Law, the National Security Law, the Law on Emergency Situation and State of Exception and legal acts issued on the basis thereof.

Cabinet of Ministers:

- performs energy management,
- establishes the State Energy Crisis Center (hereinafter - SECC),
- determines the procedure for the installation of new facilities of energy supply merchants,
- sets out the procedures for the energy supply to users during a declared energy crisis. These procedures shall provide for restrictions on energy consumption and priorities for certain groups of energy users and the procedure for the use of fuel safety reserves and safety reserves in energy supply merchants in order to ensure, as far as possible, uninterrupted energy supply to energy users,
- declares the state energy crisis on the proposal of the Minister of Economics (head of SECC).

Ministry of Economics:

- develops and implements energy policy,
- plans long-term, medium-term and operational measures related to the prevention of the energy crisis and ensures their management and implementation,
- is the competent authority on the basis of the legal provisions in force to ensure the implementation of the measures provided in Regulation 2019/941,
- cooperates with other EU Member States and their competent authorities to promote security of supply and the integration of the internal energy market,
- evaluates energy prices and their changes in the world and local market, domestic energy consumption and its changes,

- checks information on the balances of oil product safety reserves and fuel safety reserves during the reporting period and evaluates their changes.

SECC

Regulations of the Cabinet of Ministers of January 29, 2002 No. 40 "Regulations of the State Energy Crisis Center" determines the procedure and competence of the SECC. SECC is a coordinating and consultative state institution, and its task is to manage crisis prevention and crisis response measures during the state energy crisis or in case of its threat, as well as in case of emergency and exceptional situation.

SECC has the following responsibilities:

- to provide energy users with energy during the crisis in accordance with the procedures specified in regulatory enactments, as well as to organize operative state assistance and support to local governments in the prevention of the crisis and elimination of the consequences thereof,
- to coordinate the energy supply to users and the use of the national security reserve for oil products in accordance with the defined groups of energy users and the level of the energy crisis,
- to coordinate the activities of local government energy crisis centers in accordance with the procedures prescribed by law,
- if necessary, to establish a group of specialists and experts for crisis analysis, as well as to invite representatives of any economic sector to participate in the meetings of the SECC,
- to summarize, analyze and evaluate the measures taken and the damage caused by the crisis, as well as to develop proposals for further reduction of the risk and potential damage of the crisis,
- to ensure the confidentiality of the information obtained, respecting economic, commercial and state secrets,
- to prepare and submit to the Cabinet in accordance with specified procedures proposals regarding:
  a) the level of crisis,
  b) restriction of energy consumption,
  c) the use of the fuel safety reserve,
  d) the purchase and sale of fuel, fuel safety reserves and oil product safety reserves belonging to energy supply and fuel companies.

SECC has the following rights:

- to represent Latvia in international organizations and intergovernmental negotiations on assistance or co-operation in crisis management, prevention and elimination of its consequences during crisis and post-crisis, as well as to prepare draft agreements,
- in the event of a crisis or threat thereof, to request and receive free of charge from legal and private persons the information necessary for the operation of the crisis center.

PUC:

- monitors that electricity system operators, producers and traders in their activities comply with the Law "On Regulators of Public Utilities" and special regulatory enactments,
- licenses electricity transmission and distribution system operators and registers electricity traders and producers,
- examines applications, complaints and disputes regarding the provision of electricity services,
- approves transmission and distribution system service tariffs and mandatory procurement and capacity components,
- monitors the wholesale electricity market so that it is possible for all electricity traders to operate on equal terms and to prevent market manipulation. The Regulator performs this function in accordance with the European Union REMIT Regulation “Regulation on Wholesale Energy Market Integrity and Transparency”,
- ensuring and monitoring the security of electricity supply, as part of their tasks attributed by Article 59 of Directive (EU) 2019/944.

AST:

- an independent electricity transmission system operator in the Republic of Latvia, engaged in providing electricity transmission network services and ensuring the balancing and stability within the transmission network,
- the electricity transmission network consists of interconnected networks and equipment, including cross-border connections with voltages of and above 110kV, which are used to transmit electricity from the producers of electricity to the relevant distribution network or end-users,
- to ensure the sustainable functioning of security of supply as a critical service,
- maintains and develops electricity internal transmission networks and external connections,
- manages the Latvian electricity system in real time, balance between production and consumption.

ST:

- a licensed electricity distribution system operator that provides electricity distribution services in the area specified in the license,
- maintains and develops 0.23-20 kV electricity network of almost 93 thousand. km in length,
- provides electricity supply to approximately 1.1 million customer facilities,
- participates in ensuring and developing a coordinated and efficient energy supply,

- manufactures the necessary power line supports in the company's Wooden Support Plant, professionally trains employees in the company's Training Center,
- JSC “Latvenergo” group part - subsidiary.

4. PROCEDURES AND MEASURES IN THE CASE OF THE ELECTRICITY CRISIS

4.1. National procedures and measures

4.1.1. Procedures and measures in the cases of an electricity crisis

In accordance with Section 59 of the Energy Law, an energy crisis is a period when the supply of energy or fuel to energy supply merchants or energy users is endangered or disrupted to such an extent that energy supply merchants are unable to predict and prevent such threats or disruptions in a timely manner. Pursuant to Section 60 of the Energy Law, a state energy crisis is declared in cases when the energy supply is disrupted to an extent that may endanger the safety, health and operation of economic sectors, and these disruptions cover an area with more than one third of the country's population or which also occupies more than half of the national territory. The state energy crisis is announced by the Cabinet of Ministers on the proposal of the Minister of Economy.

To manage the crisis prevention and response to the consequences of the crisis during the declared energy crisis or in the event of its threat the SECC is convened. The SECC is a coordinating and consultative state institution, which includes representatives from the Ministry of Economics, Ministry of the Interior, Ministry of Transport, Ministry of Justice, Ministry of Environmental Protection and Regional Development, Latvian Association of Local Governments, PUC, AST, ST, Latvenergo, joint stock company “Gaso” – DSO (gas), joint stock company“ Rīgas Siltums ” – district heating company of Riga, joint stock company“ Conexus Baltic Grid ”, association“ Latvian Fuel Traders Association ” and the National Armed Forces.

In the event of a state threat, a Crisis Management Council is convened to coordinate the operational measures of state administration institutions and civil-military co-operation to overcome the state threat. The Crisis Management Council is chaired by the Prime Minister. The members of the Crisis Council are the Minister of Defense, the Minister of Foreign Affairs, the Minister of Economy, the Minister of Finance, the Minister of the Interior, the Minister of Justice, the Minister of Health, the Minister of Transport and the Minister of Environmental Protection and Regional Development. Heads of national security institutions and other public officials may be invited to a meeting of the Crisis Management Council in an advisory capacity.

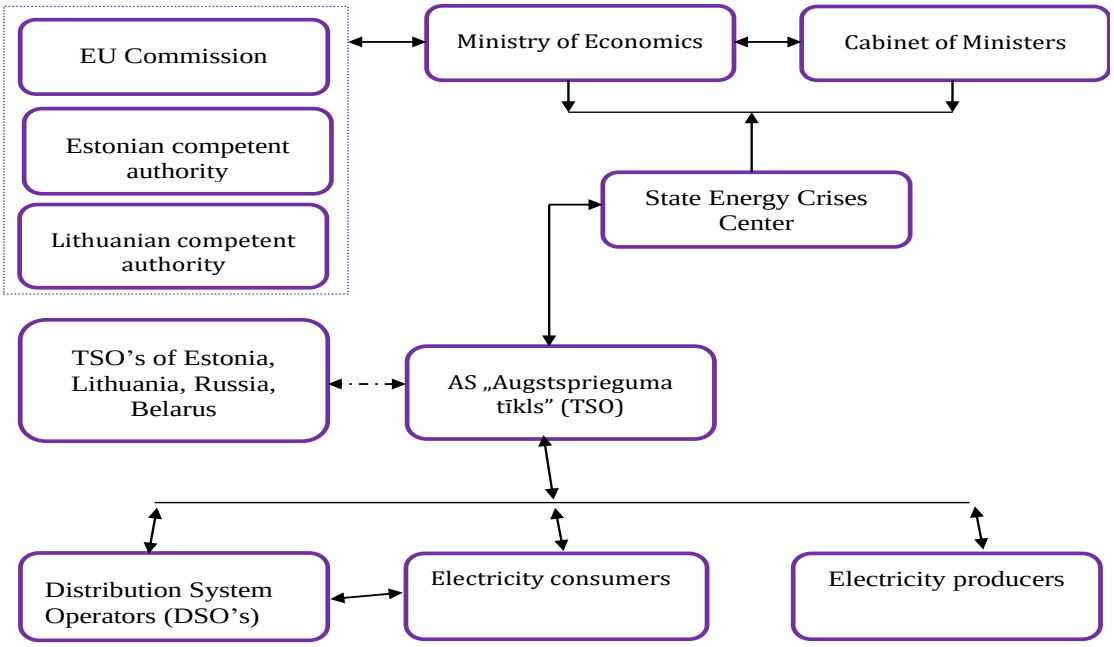
In accordance with Paragraph 37 of Cabinet Regulation No. 508 of 6 July 2021 “Procedures for Identification, Planning and Implementation of Critical Infrastructure, including European Critical Infrastructure, Security Measures and Business Continuity”, the level of energy crisis, high and especially high terrorist threat, in the event of declaring a state of emergency and a state of emergency, the

Cabinet of Ministers may decide that the National Armed Forces or the State Police shall take over the provision of full or partial physical security measures for certain critical infrastructure of categories B, C and D or European critical infrastructure.

Following actions in the worst-case scenario, a prolonged electricity crisis:

Early warning	The Ministry of Economics issues early warning after consultations with AST. The SECC is convened. The Ministry of Economics notifies the Commission and the national competent authorities in Estonia and Lithuania.
Declaring electricity crises	The SECC is preparing an order on the announcement of the energy crisis The Cabinet of Ministers issues an order declaring the energy crisis
Informing other TSO's	AST informs TSO's of the BRELL agreement.
Recovery measurements	AST operates the network and starts using recovery measurements if necessary. DSOs and power plant operators operate in accordance with AST's instructions.
Public information	The Ministry of Economics informs the public about an electricity crisis. The Cabinet of Ministers or Crises Management Bord bases on the SECC decisions may give more detailed instructions.
End of electricity crises	AST informs the SECC and the Ministry of Economics about the end of an electricity crisis. The SECC informs Cabinet of Ministers about the end of an electricity crisis. Ministry of Economics informs Commission and the competent authorities of Lithuania and Estonia about the end of an electricity crisis.
Ex-post evaluation	The Ministry of Economics provides the ECG and the Commission with the ex-post evaluation report within three months after the end of an electricity crisis.

Information flow announced during the energy crisis



4.1.2. Preventive and preparatory measures

On Government level

The National Civil Protection Plan approved by the Cabinet of Ministers on August 26, 2020 provides for the competence and action of disaster management entities in the implementation of disaster management measures - prevention, preparedness, response and response measures related to national and regional disasters or disaster threats, as well as providing support to the national defense system and determining the functioning of the civil protection system in the case of a military invasion or war.

In the field of energy, the National Civil Protection Plan assesses the following potential threats: accident in the oil product pipeline system; accident in the natural gas supply system; ruptures of dams and other hydraulic structures - hydraulic construction of Daugava hydroelectric power plant cascade; damage to electricity transmission and distribution networks.

In accordance with the Critical Infrastructure Protection Program developed by the Ministry of the Interior, an inter-institutional working group has been set up at government level to deal with critical infrastructure protection issues, including cyber security. National security authorities shall, in accordance with their competences, carry out a risk assessment and maintain a list of national critical infrastructure.

The Cabinet of Ministers Regulations No. 508 of 6 July 2021 "Procedures for Planning and Implementation of Critical Infrastructure, including European Critical Infrastructure, Identification, Security Measures and Business Continuity" prescribes the procedures for the identification of critical infrastructure, including

European critical infrastructure, and planning and implementation of security measures. The Interinstitutional Working Group is an advisory collegiate body that evaluates and develops critical infrastructures, including the European Critical Infrastructure.

The National Economic Mobilization Plan describes availability of resources such as: electricity (generators for alternative electricity supply), communications, food, fuel. Plan summarizes information about resources, that are currently available by institutions and critical services and resources that are needed by the institution and the activities of the services in the event of a national threat within at least 24 hours, assuming that the strategic supply of resources and essential goods is completely interrupted during this time.

National preventive action plan for natural gas sets out the necessary measures to prevent or reduce the identified risks, including measures on energy efficiency impacts and demand-side measures included in joint and national risk assessments. At the same time, this Plan assesses the state's ability to supply natural gas in accordance with the standards specified in the Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard security of gas supply (Regulation 2017/1938) – Infrastructure Standard and Gas Supply Standard.

National emergency action plan for natural gas sets out the measures to be taken to assess or mitigate the impacts of the natural gas supply disruption. This Plan shall determine the roles and responsibilities of natural gas undertakings, competent authorities and other bodies at each of the crisis levels. In addition, it also includes a regional section developed jointly with Member States of the relevant Gas Supply Risk Group.

Regulation 2017/1938 obliges all directly connected Member States to establish bilateral arrangements for the application of the solidarity mechanism (**the Solidarity agreement**) to mitigate the effects of a major natural gas emergency and to ensure the flow of natural gas to solidarity protected customers. The various elements of the Solidarity arrangements concerning the legal, technical and financial aspects of solidarity are set out in Article 13 of Regulation 2017/1938. Solidarity protected customers are not interrupted or restricted in their energy consumption, regardless of the level of energy crisis declared. Thus, in the event of a natural gas emergency, they are primarily guaranteed the continuity of natural gas supply.

<u>On TSO level</u>

AST is obligated to notify stakeholders about emergency which may lead to crisis situation predefined in legal acts.

Company emergency and crisis management procedures ensures the continuity of the critical infrastructure of AST.

Objective: to determine the critical infrastructure objects necessary for the operational management of the electricity transmission system, to determine the process by which the continuous operation of critical infrastructure is ensured, to determine the responsibilities for ensuring the continuity of critical infrastructure, as well as the basic principles of servicing, replacement and development.

AST dispatcher management system SCADA continuity and operation recovery plan.

Security requirements for information systems AST has developed a system defense plan, defined in the NC ER regulation. All measures defined in system defense plan are essential in preparing for electricity crises. System restoration plan (pursuant to NC ER regulation) (all crisis scenarios)

AST has also developed system restoration plan, defined in NC ER regulation, in 2018. The measures described in the system restoration plan will be used when the system is in “emergency state”, if the measures in the system defense plan are not enough to restore the system, and in “blackout state”. These measures will also be used if any of the crisis scenarios in this plan lead to emergency or blackout state.

Joint emergency trainings of the Baltic system operators about insularity are carried out on a regular basis. *Blackstart* tests are performed regularly to check the readiness of the electrical system to be restarted from the blackout state.

Preventive measures also include measures to improve electricity transmission and distribution infrastructure. At present, the electricity transmission network in the western part of Latvia has been completely renovated, with the construction of a new 330 kV line - “Kurzeme’s Ring”. This year, the 3rd electricity transmission interconnection between Estonia and Latvia was put into operation.

In order to improve the quality and reliability of electricity supply, ST is providing electricity supply to approximately one million customer facilities and covering 99% of the country's territory, is purposefully moving towards smooth reconstruction and renewal of the electricity network. 1.7% of the volume of power lines is renewed every year. The basic focus is maintained on low-voltage bare power lines, where bare wires are replaced with a suspension cable, contributing to an increase in the share of isolated power grids. From 2023, bare wires will not be built in the medium voltage electricity network. It is planned that the share of isolated electricity network will increase from 59% in 2021 to 75% in 2028. The construction of an insulated electricity network, together with purposeful reconstruction, renewal and maintenance of the electricity network, allows to significantly reduce the number of failures and improve the security of electricity supply indicators SAIDI and SAIFI. At the same time, it is planned to increase the reconstruction of unsafe medium voltage power lines and reduce the total length of the electricity network by 1-2%.

ST continues to work on the development of remote control of medium voltage electricity network by installing circuit breakers and controllable load switches in

overhead lines. Local automation solutions are also being implemented and sensors are being installed. The remote network control or automation system FLIR (Fault detection, Location, Isolation and supply Restoration) helps to localize the mains fault, thus reducing the duration of power outages to customers.

4.1.3. Framework for the introduction of restrictions on customer power consumption

In the case of a threat to the security of electricity supply, including a long-term imbalance in the fuel and energy market in the whole or part of the country, restrictions on the supply and off-take of electricity may be introduced. Restrictions on the supply and off-take of electricity are implemented by system participants upon order of the TSO.

In accordance with Decision No. 1/4 of the Council of the Public Utilities Commission of 26 June 2013 "Network Code in the Electricity Sector", the Transmission System Operator shall perform the following activities to maintain the security of the electricity system in relation to the restriction of electricity consumption:
- determine possible restrictions on the operating modes of the system participants and assess the impact of these restrictions on the operational security of the electricity system,
- coordinates and manages the disconnection of the electrical installations of the system participants connected to the transmission system, observing the sequence of electricity consumption restriction and disconnection volumes in the event of an emergency situation in the electricity system or a threat to the stable operation of the electricity system,
- select electricity generators with whom, if necessary, contracts are concluded for the use of generation units for autonomous start-up in case of total or partial blackout of the electricity system.

Regarding load limitation and categories of protected users, the Cabinet of Ministers Regulations No. 312 of 19 April 2011 "Procedures for Supply of Energy Users and Sale of Fuel during the Energy Crisis and in the Event of a State Threat" are in force, where three priority groups of end users are determined.

In accordance with the requirements of Article 22 of Commission Regulation (EU) 2017/2196 establishing a network code on emergency and restoration conditions in the electricity system, the TSO shall determine the amount of net demand in its control area to be manually disconnected, if necessary, to prevent the spread or aggravation of the emergency.
Request disconnection is activated to:
- deal with overload or undervoltage situations,
- address situations where assistance is required due to active capacity, but which is not sufficient to maintain adequacy in the TSO control area during the following day and the current day and which could lead to a risk of frequency degradation in the synchronous area.

The results of the previous winter load measurements of the TSO are used to determine the amount of demand.
In the Latvian electricity system, the TSO has set the full amount of net demand for manual disconnection at 55% to 65% of the system load. About 5% of the system load is created by users connected to the transmission system and distribution system operators with low consumption. The remaining 95% of the system load is created by consumers connected to the ST. Where necessary, manual disconnection measures shall be applied, as far as possible, jointly and equally to all users connected to the transmission system. In cooperation with the ST, a procedure for manual disconnection of consumers has been developed, which envisages performing stepwise disconnection. A total of 10 steps are provided, each in the amount of 70 MW. When determining the amount of interruptible demand, the distribution system operator shall assess the nature of the connected demand, excluding connections to which electricity generation facilities are connected and most of the time electricity is delivered to the network. Disconnection takes place as soon as possible after disconnecting the request. On the other hand, back-switching takes place gradually by switching on the load. The connection of consumers may be performed only with the permission of the TSO.
At the same time, it should be noted that in accordance with Paragraph 73 of Cabinet Regulation No. 50 of 21 January 2014 “Regulations on Electricity Trade and Use”, the TSO or DSOs may disconnect the user's electrical installation without warning if the electrical installation is disconnected in accordance with the system protection or restoration plan to ensure the stable operation of the electricity system.

Given that there is no separate regulation regarding sudden or manual load disconnection, a regulatory framework is currently being worked out, which will stipulate load limitation and load disconnection requirements in accordance with today's situation, identifying protected users and giving TSOs and DSOs legitimate rights to fulfill the conditions for maintaining the stability of the electricity supply system.
At present, TSO and DSOs can only reduce consumption through disconnection activities.

In the event of a foreseeable crisis, notification and a call to reduce electricity consumption will be made on the instructions of the SECC:
- a national announcement will be made about the impending crisis and users will be called upon to reduce the load (responsible: SECC, Ministry of Economics),
- TSO controls the total public consumption load, develop possible load reduction amounts through disconnection,
- The DSO, together with the TSO, prepares possible load disconnection lists, which can be disconnected remotely by SCADA,
- if the load does not decrease at a certain time, the TSO commands the SSO to perform further disconnection of system elements. If the disconnection requires a long time, the SSO has the right to change the disconnected switches.
- if the situation returns to normal, the TSO does not require disconnection of the load and reports to the SECC.

4.1.4. Mechanisms used to inform the public about the electricity crisis

The Ministry of Economics informs the public about electricity crises according to in accordance with the Ministry's internal regulations on the procedure for the circulation of information in crisis situations. Communication with the media is coordinated by the Public relations department. Communication shall be carried out by the designated official responsible for communication with the media.

TSO informs its stakeholders according to its own guidelines.

In accordance with the first paragraph of Article 110 of Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 “On the establishment of a European Electronic Communications Code”, Member States shall ensure the implementation of an early warning system informing the public about an emergency, disaster or catastrophic threat using the service of a mobile operator by 21 June 2022. The State Fire and Rescue Service has evaluated the public awareness solution and as a result it was concluded that in accordance with the requirements for the development of the early warning system in the future, the most suitable mobile communication technology is mobile cell broadcasting technology.

4.2. Regional and bilateral procedures and measures

4.2.1. Regional measures

Regional procedures and measures are determined upon BRELL agreement and instructions for parallel operation of IPS/UPS synchronous area. Regional cooperation mechanisms include:

Agreement on the management of the Baltic States’ electricity system balance,

Programme on disconnection of the Baltic States from IPS/UPS for isolated operation.

The Baltic TSOs has concluded an agreement for the Baltic States’ electricity systems balance management purposes, which provides for the opportunity to exchange emergency power reserves in emergency situations.

Neighboring TSO's are obligated to assist each other in case of exceptional situation. Also, pursuant to Emergency and restoration NC, assistance must be provided (if possible) if a TSO in emergency state request it. System defense and restoration plans are coordinated with Estonian TSO (Elering) and Lithuanian TSO (Litgrid). Pursuant to NC ER Article 14, each TSO shall provide through interconnectors any possible assistance to the requesting TSO in emergency state, provided this does not cause its transmission system or the interconnected transmission systems to enter emergency or blackout state.

In the case of resynchronizing island operation areas, the weaker system is adjusted so that the resynchronizing is possible.

4.2.2. Bilateral measures between Estonia and Lithuania

In addition to the above, TSO has a cooperation agreement in which assistance and the exchange of spare parts are possible if this is necessary to restore the network.

5. CRISIS COORDINATOR

In accordance with Cabinet Regulation No. 588 of 22 September 2020 "Regulations of the Ministry of Economics", the Ministry of Economics develops and implements energy policy, as well as plans measures related to the prevention of the energy crisis and ensures their management.

Consequently, the Ministry of Economics is the responsible state institution in overcoming the energy crisis (hereinafter - crisis coordinator).

The crisis coordinator is also a contact point for exchanging information with crisis coordinators and competent authorities in neighboring countries (Estonia and Lithuania) and with the European Commission.

Contact information of the Latvian Crisis coordinator:

phone: +371 67013126, + 371 67013132, +371 67013128

e-mail: krize@em.gov.lv ; pasts@em.gov.lv

6. STAKEHOLDER CONSULTATIONS

The plan was developed in close cooperation with representatives from AST, JSC "Conexus Baltic Grid" - TSO (gas), ST, Latvenergo, PUC and the Latvian Association of Electricians and Power Engineers (LEEA). During the development of the plan, three online meetings were held with representatives of the above companies and institutions, as well as separate meetings with representatives of AST, ST and LEEA during which AST and ST proposals have been harmonized.

7. EMERGENCY TESTS

The Ministry of Economics has not yet agreed on the timetable of emergency tests with other competent authorities and TSO's of the region.

It is expected that the competent authorities and TSO’s of the Baltic countries will carry out simulations of electricity crises. In particular, the simulations will test cooperation and information sharing mechanisms.