

COMPANY ACTIVITIES AND VALUE CREATION



The task of ELES as the transmission system operator in the Republic of Slovenia is the **concern for secure operations of the Slovenian electricity system**. To be able to successfully implement the mentioned tasks and create value for key stakeholders, the Company must provide for:

- uninterrupted system operation,
- sound condition of existing high-voltage transmission lines and pertaining power facilities,
- the planning and construction of new high-voltage transmission lines and high-voltage units, and for
- the development and introduction of innovations needed due to major changes in the electricity sector.

To create the value of ELES successfully, it is necessary to **cooperate and seek synergies between the key activities** performed by the Company, the results of which for 2017 are presented below. In addition to technical development aspects of planning and implementing the Company's core activities (Chapter 2.1), the Company is also guided by responsibility for sustainable operations economically, socially and environmentally (Chapter 2.2) in value creation.

The highlights of activities that marked value creation at the Company in 2017

ELES, as the transmission system operator, manages and adapts to numerous changes that affect the management of ELES operations, the maintenance of existing and construction of new transmission capacities, including investments and the planning and implementation of strategic innovations.

The main interrelated challenges, opportunities and risks to the Company's core activities in 2017:

- **Management of demanding operating conditions:** Last year, the Company faced demanding operating conditions resulting from severe weather conditions and vulnerability of the transmission system several times. All conditions were successfully and efficiently managed, also due to intensive preparations for such situations, professionally and practically trained teams and close cooperation with distribution companies, producers and other partners.

At the beginning of April, it was necessary to **disconnect a link due to urgent maintenance works on the 110kV line between Divača and Ajdovščina**, which is the only power supply link for offtake in the area of northern Primorska region. Demand was supplied with the **establishment of the so-called island operation of hydro power plants on the Soča river** with offtake in the northern Primorska region.

In December, **several transmission lines were damaged** due to strong winds. Failures also caused interrupted supply to offtake. In close cooperation with distribution companies, **consequences were eliminated in the shortest possible time**.

- **Trans-European exchange mechanism for unintentional deviations:** Due to direct benefits of the INC mechanism, ELES continued activities in 2017 that will **speed up the connection to the trans-European exchange mechanism for unintentional deviations (IGCC)** at accelerated pace. It is expected that the connection may take place in 2019.
- **Market coupling:** In 2017, major advances were made in the **coupling of the Slovenian and Croatian day-ahead electricity markets** and efforts were also made for intraday coupling and, consequently,

implementation of the target model for the allocation of intraday cross-border transmission capacities.

- **Integration of renewable energy sources (RES) in the network:** In the Slovenian electricity system, solar power plants account for a **large share of unpredictable RES**. In 2017, the Company used its own know-how to determine a network of reference power plants and agreed with producers and distribution companies to **exchange 94 measurements of solar power plant production very close to real time**.
- **Planning cross-border transmission capacities:** As regards guidelines to allocate cross-border transmission capacities and manage congestion, the Company **participates in the development of methodologies to calculate optimal cross-border day-ahead and intraday transmission capacities**. 2017 was a demanding year for all transmission system operators, full of challenges in the development of new methodologies for a common/harmonised calculation and allocation of transmission capacities both for a short and long period of time.
- **Implementation of grid codes:** A major part of research and development in 2017 was characterised by the implementation of grid codes. European transmission system operators have been given the task of **developing some 140 new methodologies and introduce them in existing or new work processes**. ELES experts are, therefore, included in regional and pan-European projects in that area, such as MARI, PICASSO, IN, XBID, DsaRAa, etc.
- **Development of smart grids (European and international projects):** Major development projects in which ELES is involved or which are coordinated by ELES are **FutureFlow, MIGRATE and NEDO**. Own development and innovations are applied in practice through the SINCRO.GRID project, within which the SUMO project (System for identifying operating limits) is covered along with the installation of electricity storage devices and development of a virtual cross-border management centre. *More about European and international projects is available in chapter 2.1.3.*

Table 8: Table of key European and international projects in which ELES takes part or the leading role and their connection with value creation at ELES and cooperation with stakeholders

Project	Content focuses - relation with value creation by ELES	Stakeholders (definition of ELES stakeholders directly benefitting from the project and allowing them to create value)
NEDO	cooperation between transmission and distribution system operators, strengthening the role of prosumers, advanced communities - island operation, new business models	distribution system operators, industrial and residential energy consumers, communities (local, city, consumer, etc.), industry (Slovenian, Japanese)
Sincro.Grid	effective system operation and management, support for the transmission network infrastructure, provision of flexible electricity supply, cross-border cooperation, better RES integration in the network, better utilisation of existing network	Croatian transmission system operator, Slovenian and Croatian distribution system operators, research institutions (institute, faculty), industry and other leading players in the electricity sector
FutureFlow	cross-border cooperation, support for the operations of electricity markets, strengthening the role of prosumers and their inclusion in the electricity system, new business models	industrial and residential energy consumers, international partners (transmission and distribution system operators and other leading players in the electricity sector), institutes, IT companies, electricity traders
Defender	strengthening the resilience of critical infrastructure: security (physical, cyber, civil), support for effective operation, risk management, operational protection and quality of the network	transmission and distribution system operators, research institutions, industry, IT companies, security authorities, national bodies
Migrate	researching the future electricity system (distributed energy sources, flexible energy supply), support for effective operation and proper infrastructure development, new business models, risk management and opportunities	research institutions (institutes/universities), transmission and distribution system operators, industry
TDX-ASSIST	cooperation between transmission and distribution system operators	research institutions (institutes/universities), transmission and distribution system operators, ENTSO-E, technology companies, research institutions, electricity market participants
OSMOSE	cross-border cooperation, support for the operations of electricity markets, better use of the network	transmission and distribution system operators, research institutions, electricity market participants, industry and IT companies
BioEnergyTrain	HR training and awareness raising in the energy sector, exchange of knowledge and training - empowerment of employees in the entire electricity supply chain in relation to renewable energy sources	educational and scientific research institutions, employees in the electricity sector, secondary school and university students

A detailed presentation of individual European and international projects can be found in the chapter describing strategic innovations (2.1.3).

Common denominators (added value of ALL strategic innovation projects)

1. promotion of innovations among ELES employees (in all areas of operation)
2. promotion of innovations among external stakeholders
3. international cooperation and co-development of the electricity sector, diversification of risks related with investments in research activities

Key goals for 2018 and later

The Company has set the following key goals for 2018:

- **Continuation of investments in smart grids:** being aware that major changes will be required as regards the transmission network and management of the electricity system upon changed conditions in the electricity sector, the Company will continue investing in the development of smart grids that will facilitate the inclusion of renewable energy sources and prosumers in the transmission network and increase the reliability of system operations;
- **Acquisition of grants to carry out ELES strategic and innovation projects:** opportunities will be sought to acquire grants to carry out Company projects or projects designed together with partners from Slovenia or abroad;
- **Construction of a 2 X 400kV Cirkovce-Pince transmission line and 400/110kV Cirkovce transmission system substation:** the construction of the transmission line will connect the Slovenian electricity transmission network with the Hungarian electricity transmission network, thus improving the security of supply to offtake in Slovenia and enhancing market integration in the region;
- **Implementation of European legislation:** the activity of the electricity transmission system operator is regulated by the Slovenian and European legislation, which is why the Company is obliged to implement all new requirements in due time and carry out newly assigned tasks successfully.