No 43817/17.10.2025

Directorate

NOTE

Regarding the Shareholders' General Assembly approval of RET Development Plan for 2026 - 2035

I. Overview

RET Development Plan for 2026 – 2035 (hereinafter called PDRET) was drafted by Transelectrica in accordance with art. 35 paragraphs (1), (2), (2^1) and (30) of Natural Gas and Electricity Law no. 123/2012 with later amendments and additions, according to which:

'(1) The system and transmission operator has the obligation at least every two years to draft and present to ANRE the ten - year development and investment plan of the transmission network, in accordance with the current status and the future evolution of energy consumption and sources, including the imports, exports of energy, after consulting all the interested factors. The development plan of the network includes efficient measures to guarantee the adequate character of the system and the safety in energy supply. The system and transmission operator publishes the ten-year development plan of network on its website.

(2) The development plan in para (1) must especially:

a) Contain the financing and achievement manner of the investments regarding the transmission network, taking into consideration the development and systematization plan of the territory crossed by them while complying with the environment protection norms;

b) Indicate to the market participants the main transmission infrastructure that must be built or modernized in the next 10 years;

c) Include all the investments already set and it will identify new investments that must be made in the next 10 years;

d) Foresee a time frame for the achievement of the investments.

(2^1) When elaborating the ten-year development plan of the network, the system and transmission operator takes into consideration the potential use of the dispatch consumption, power storage facilities or other resources as an alternative to the expansion of the system, as well as the forecasted consumption, commercial exchange with other countries and the investment plan regarding the networks on European Union level and regional networks, as well as the targets assumed by Romania to achieve the global objective of European Union.

(3) The plans in para (1) are approved by ANRE. '

II. Justification

Transelectrica achieves the planning activity regarding the Transmission Power Network (RET) in accordance with the duties and competences set by Natural Gas and Electrical Energy Law no. 123/2012 with later amendments and additions, in accordance with RET Technical Code and the conditions associated to License 161 for the provision of electrical energy transmission service, of system service and of management of balancing market, with later amendments and additions.

To this regard, Transelectrica drafts every two years the development and investment plan of RET for the next ten successive years, document that is approved by ANRE.

In accordance with art.37 para (1) letter b) of Natural Gas and Electricity Law no. 123/2012 with later amendments and additions, the owner of the transmission network 'finances or/and agrees with the financing of the investments in the power transmission network established by the system and transmission operator and approved by ANRE, which has the obligation to conduct consultations both with this one as well as with other interested parties'.

PDRET makes a presentation of the aspects related to the functioning of the power transmission network integrated in the National Power System context and of the electrical energy market intended for all electrical energy market participants, regulation authorities and decision-making bodies in the electrical energy area. The paper includes information regarding the electrical energy generation and consumption sectors, the characteristics and performances of the power transmission network, as well as other information useful in order to evaluate the existing or potential market opportunities.

PDRET includes modernization and refurbishment projects of the power transmission stations as well as development projects that aim at the achievement of new power transmission lines, transformation units, new power stations, information platforms, purchase systems for data, monitoring, command and control (EMS/SCADA) etc.

PDRET is based on the analyses carried out according to the Procedure regarding the substantiation and approval criteria of the investment plans of the system and transmission operator and of the power distribution operators, approved by ANRE order no.98/2022 with later amendments and additions.

Also, the development of RET Development Plan every two years is in accordance with Transelectrica's obligation as member in the ENTSO-E European TSOs Association to take part in the development of the European Development Plan (*Ten Year Network Development Plan* –TYNDP).

RET Development Plan for 2026 – 2035 was approved within Transelectrica on July 30, 2025.

RET Development Plan for 2026 – 2035 was submitted to public consultation during 13.08 – 13.09.2025 by publishing it on the website www.transelectrica.ro, section News.

III. Proposals

Taking into consideration the above, pursuant to art 4 of the ANRE Decision Annex 2715/17.12.2024, as well as to art 14, para 2, letter n) of the Company's Article of Association, the following is submitted to the approval of the Shareholders' Extraordinary General Assembly of the Company:

- , RET Development Plan for 2026 – 2035 - synthesis' includes an integrated presentation of the priority projects for the development of transmission power network, the implementation schedule, estimation of necessary investment and the identification of related financing sources.

Directorate

Chairman	**Member**	**Member**	**Member**	**Member**
Ștefăniță MUNTEANU	Victor MORARU	Cătălin-Constantin NADOLU	Cosmin Vasile NICULA	Florian-Cristian TĂTARU

Development Plan of Electricity Transmission Network for 2026 – 2035

Synthesis

1. Introduction

Transelectrica achieves the planning activity regarding the development of the Transmission Power Network (RET) in accordance with the duties and competences set by Natural Gas and Electrical Energy Law no. 123/2012 with later amendments and additions, in accordance with RET Technical Code and the conditions associated to License 161 for the provision of electrical energy transmission service, of system service and of management of balancing market, with later amendments and additions.

Transelectrica drafts every two years the development plan of RET for the next ten successive years, document that is submitted for ANRE approval.

The development plan is substantiated on national and European strategies and policies in the energy field in accordance with ANRE requirements and ENTSO-E recommendations regarding integrated planning of transmission systems. The content of RET development plan is supported by analysis and economics and technical studies carried out by Transelectrica and includes the strategic priorities of the Company in the field of innovation and research, transmission infrastructure digitalization, assets management and energy efficiency increase.

The development plan of the Transmission Power Network is an essential public document that presents the current situation and the network development outlook for the next ten years, analysing the entire context of the existing National Power System when drafting the Plan.

Transelectrica makes this document available to the interested parties with the purpose of:

- **Informing on the capacity of the transmission network** and its capacity to answer to users' requests and public interest, in relation with the objectives of the national strategies and policies and the provisions of the laws in force;
- **Creating a collaboration framework between the System Transmission Operator and market participants** to correlate the actions and investments that can influence the performance indicators of the service and SEN safety;
- **Presenting the regional connection opportunities and the use of RET** based on the forecast of the consumption request evolution and generation capacity availability;
- **Informing about the evolution of power exchange capacity with neighbouring countries** in accordance with regulatory requirements related to energy European internal market;
- **Evaluating the SEN reserve level,** necessary to cover the consumption request during peak period, both from generation as well as from energy transmission;
- **Estimating the financial resources necessity for RET development** and identifying the related financing sources;
- **Promoting the accelerated implementation of European strategic initiatives,** focusing on digitization and power efficiency.

This development plan of Transmission Power Network for 2026-2035 is developed by National Power Transmission Company Transelectrica according to its vision and mission, taking into consideration the economic development outlook of Romania and the evolution of the energy sector. Document complies with the content requirements provided for in ANRE Order no. 98/2022 regarding the approval of *Approval and Substantiation Procedure of development and investment plans of system and transmission operator and of energy distribution operator.*

RET development plan's **purpose** is to define a long term vision (2026-2035) regarding the power transmission infrastructure development by establishing some strategic objectives and the corresponding action directions. This substantiates the major investment projects necessary for the modernization, expansion and digitization of the power transmission grid in order to ensure a safe, efficient, resilient and interoperable National Power System in accordance with the requirements of energy transition and European standards in the field. RET development plan also includes the investments' financing sources together with a schedule estimating their implementation.

RET development plan for 2026-2035 is developed in the European complex strategic context where the energy politics of the European Union play an important role in shaping the future of the energy sector. To this regard, the development objectives of Transelectrica are built in full accordance with the strategic directions of EU, aiming directly at:

- **Diversifying the power sources and raising energy security** by strengthening the power transmission grid and by developing the interconnection capacities with the power systems of the member states;
- **Developing an integrated internal energy market** by RET modernization and by speeding energy markets coupling on all time horizons;
- **Raising energy efficiency and contributing to a sustainable economy** by investments in intelligent infrastructure and advanced technologies, monitoring and control systems with the purpose of reducing energy losses and maximizing the use of resources;
- **Decarbonization of National Power System** by incorporation of renewable energy sources and by ensuring their access to the grid, thus contributing to the achievement of climate targets established through Paris Agreement and European Green Pact;
- **Promoting the research, innovation and digitization** by implementing pilot projects, adopting emerging technological solutions and the digital transformation of the company in line with the European agenda regarding energy transition and competitiveness.

Its specific objectives show these European directions and include:

- Ensuring the safe functioning of SEN and supplying transmission service at regulated quality standards;
- RET development in relation with the projections for consumption, generation, import, export and electrical energy transition;
- Increase of interconnection capacities and incorporation of Sole European Market;

- Contribution to incorporation of renewable energy sources into the grid and their efficient transmission to consumption areas;
- Improving the energy efficiency and the investments;
- Promoting fair and non-discriminatory access to the grid;
- Implementing innovative and digital solutions through Digital Transformation Program.

This incorporated approach makes Transelectrica a key-player in achieving the energy transition in Romania and in reaching the targets for energy security, sustainability and competitiveness established at European Union level.

In accordance with art 10 of the Procedure approved by ANRE Order no.98 /2022 regarding the substantiation and approval criteria of investment plans of the system and transmission operator and of energy distribution operators:

✓ RET Development Plan for 10 years includes:

- Brief presentation of the context at national and European level in energy transmission field, on-going strategies and politics, the objectives and targets to which the investments projects in the development plan bring contribution, as well as the principles and methodologies used in creating the development plan, the hypotheses and scenarios developed, the action directions;
- The investment works that result as necessary in RET for the 10 years projection after the analysis provided for at para. (1), time scheduling of investment projects, the total value and the estimation of annual investment expenses for each investment project, highlighting the financing sources (own funds, borrowed sources, financial contributions, income from cross border interconnection capacity);
- The presentation of changes interferes with the investments projects list compared to the previous edition of the 10 Years Development Plan approved by ANRE, with documented justification for each modified/eliminated objective;
- The presentation of investments achievement status included in the previous edition of the 10 Years Development Plan approved by ANRE, which includes the value estimation of the impact of delays or non-fulfilment of the investments from the previous edition of the Development Plan;
- Identified investments necessity throughout the consultancy process carried out by TSO;
- Presentation and motivation for the correlation and conformity of the Energy Strategy Plan of Romania on medium and long term with the non-mandatory plan at the Union level to develop the grid for ten years, mentioned at art 30, para (1), letter (b) of EU Regulation 2019/943 and the National Plan regardinng energy and climate sent according to EU Regulation *2018/1999, in force editions;*

✓ For the substantiation of 10 Years Development Plan of RET, TSO performs the following studies and analysis for RET outlook on short term - for the following 5 years, namely on long term:

Theme	Details	Chapter/Annex
Energy generation and consumption	Current status and future evolution of energy consumption, of generation sources structure	Chapter 5; Annex 2.

	and capacity, including energy imports and exports, taking into consideration the projections of cross border capacities development.	
Technical condition of RET	RET analysis depending on the age and technical condition of its elements, detailing voltage levels and grid elements on geographical areas	Annex 6; Annex E3.
Network stability	RET checking under static and transient stability conditions, in order to identify critical areas of the grid and the necessary works to increase its operational safety, improvement and efficiency.	Annex 3.
Power losses	Analysis of power losses level at characteristic levels of load curve, identification of critical areas and elements and establishment of the necessary measures to reduce them.	Annex 1; Annex 3.
RET energy efficiency	Assessing the possibility of rising RET energy efficiency, identification of measures to improve its energy efficiency, establishing the measures implementation schedule.	Annex 4.
Service performance	Analysis of service performance level in accordance with the indicators provided for in specific regulations in force, identification of the factors that have a significant influence on it, establishing the measures necessary to improve the service performance and to ensure control over the main influence factors.	Annex 1; Annex 6; Chapter 6.
System adequacy	System adequacy analysis on load peak on short, medium and long term through methods that consider the structure of generation capacity and the degree of uncertainty induced by the share of available power of production capacities from renewable sources in total available power at SEN level	Annex 1; Annex 3.
RET Flexibility	Analysis regarding the evaluation of RET Flexibility	Annex 3.
Refurbishment and modernization	Identifying RET elements and areas for which it is necessary to perform investments consisting of refurbishment and modernization	Annex 6; Annex 7; Chapter 6.
Expansion/development works	Identifying network areas where expansion/development works are necessary.	Annex 3; Chapter 6.
Prioritizing the investments	Prioritizing the investments by detailing the prioritization criteria and the analysis type that formed the basis for drawing up the timeline for the implementation of the forecasted investment works.	Annex 3; Chapter 6; Chapter 7.
Investment value and financing sources	Estimation of total value of investments works and the expenses level of annual investment, as well as the financing sources (own funds, borrowed sources, financial contributions, income from cross border interconnection capacity)	Annex F-1; Annex F-2; Chapter 8; Chapter 9.
Interconnection projects	Update of interconnection projects status provided for in category “F –raise of interconnection capacity “ within 10 Years Development Plan, in relation with the list of projects from the European Plan TYNDP,	Annex F-2; Annex F-3; Chapter 2; Chapter 6.

	European list of common interest projects and the assumed targets on national level regarding the interconnection degree on EU level.	
Impact of investments on tariffs	Evaluation of impact of investment expenses included in the plan on regulated tariffs	Chapter 9.3.
Neighbouring TSO's correlation with DP	The correlation manner of the 10 Years Development Plan of the network with similar plans of neighbouring countries' energy transmission networks, resulting from collaboration with neighbouring TSOs, highlighting the TSOs' obligations and the positions in the 10 Years Development Plan of the energy network involved in these collaborations/correlations.	Annex F-2; Chapter 2.
Changes compared to the previous edition	The compared analysis of investment projects that results in changes compared to the previous edition of the plan approved by ANRE with the documented justification of each changed objective.	Annex F3; Chapter 7.
Investment achievement and impact of delays	Analysis of investment achievement from the 10 Years Development Plan of the energy network approved by ANRE, with the presentation of an estimation of values of impact of delays or non-performed investments from the previous edition of the development plan (if the case, a detail of the technical nature effects that can significantly influence the functioning of RET and /or can influence the achievement of some investment projects which are on-going or are being planned will be made)	Annex F3; Annex 3.
Cyber Security	Analysis regarding measures and programmes intended for ensuring cyber security of computer systems	Chapter 6.
OTC projections	Forecast of OTC evolution in RET during the plan	Annex 1; Annex 3.
Benefits aimed at through investments	Identification, substantiation and estimation of the benefits value aimed at through performing the investments from the plan (ex. Improving the indicators regarding RET safe functioning, the performance indicators, reducing operation and maintenance expenses, OTC reduction, connection of new consumers, fulfilment of some legal obligations, etc.).	Annex F4; Chapter 2; Chapter 6.
Maintenance works	The plan of maintenance works necessary to ensure the safe operation of RET or the compliance with the legal obligations (laws, license terms, technical norms) by detailing the achievement way (own forces or by third parties), the estimation of maintenance works costs and the program of ensuring grid maintenance, developed in accordance with the provisions of the maintenance regulation.	Annex E-1; Annex E-2; Annex 7.
Digitalization of RET	Presenting the status of implementation of new obligations regarding RET digitalization.	Annex 5;Annex H; Chapter 6.4.

For each analysis requested in accordance with the Procedure approved by ANRE Order no.98 /2022 regarding the substantiation and approval criteria of investment plans of the system and

transmission operator and of energy distribution operators, the chapter or annex was mentioned above from Development Plan where the results of that analysis were presented.

All these analyses resulted in the projects included in the Development Plan of RET. A large part of these projects were included in the previous approved editions of the Development Plan of RET, the current edition including the status of that projects and the reconfirmation of their necessity.

2. Compared analysis of investment projects included in this current edition of Development Plan 2026-2035 compared to the previous edition of RET DP for 2024-2033

During the period from the approval of the previous edition of Development Plan, Transelectrica ended some strategic investments, essential for the consolidation of energy transmission infrastructure, the rise of safe supply and the acceleration of energy transition.

- RET refurbishment/ modernization:
  - Refurbishment of 220/110 kV Filești transformation station;
  - Refurbishment of 220/110/MT kV Baru Mare transformation station;
- Safety of consumption supply:
  - Increase of safe functioning of network area Argeș – Vâlcea, construction of 400 kV Arefu station and assembly of a 400 MVA AT, 400/220 kV;
- Integration of the generated energy from new plants - Dobrogea and Moldova
  - Increase of transmission capacity corridor **400 kV OHL Bucharest South - Pelicanu** (8 km);
  - Increase of transmission capacity corridor **220 kV OHL Stejaru - Gheorgheni – Fântanele;**
  - Connection of OHLs 400 kV Stupina-Varna and 400 kV Rahman – Dobrudja in the 400 kV Medgidia South power station. Step II- 400 KV d.c. OHL. **Connections in Medgidia South power station**;
  - **Refurbishment of 400 kV Medgidia South power station** and connection input-output of the 400 kV OHL in Medgidia South power station;
- **Integration of the generated energy from plants – other areas**
  - 220 kV double circuit OHL **Ostrovu Mare – RET;**
- Increase of interconnection capacity and integration of the generated energy from renewable energy sources (SRE):
  - Switching the axis Porțile de Fier - Reșița - Timișoara - Săcălaz - Arad to the voltage of 400 kV- step I , **400/220/110 kV Reșița Power station;**
  - **Expansion of 400 kV Gura Ialomiţei power station** with two cells: 400 kV OHL Cernavodă 3 and 400 kV OHL Stâlpu;

The current edition of the Development Plan related to 2026-2035 includes the following new investment projects:

- RET refurbishment/ modernization:
  - Replacement of AT2 200 MVA in the 220/110/20 kV Turnu Măgurele power station;

- Purchase and assembly of AT 4 400 MVA, 400/220 kV in the 400/220/110 kV Mintia power station;
- Modernization of 400/110/20 kV power station Drăgăneşti-Olt;
- Modernization of protection – control – command system in 400/110/20 kV power station Tulcea West;
- Modernization of protection – control – command system in 400/110 kV Constanta North power station;
- Modernization of protection – control – command system and automation in 400/220/110 kV power station Bucharest South;
- Modernization of protection – control – command systems and automations in 400/110/20 kV power station Gura Ialomiței;
- Modernization of protection – control – command systems and automations in 220/110/20 kV power station Turnu Măgurele;
- DigiTEL Next-Gen Power Grid – Improving the exploitation activities in the power stations of Transelectrica by using Digital Twin technology and the autonomous robotic systems;
- Improving the operation of overhead electric lines by the expansion of the online monitoring system DigiTEL Smart Lines –step 2;

❖ Safety of consumption supply:
- Reconductoring of d.c. 220 kV Brazi Vest – Fundeni OHL;
- New Autotransformer (AT2) 220/110kV, 200MVA Stupărei;
- Transformer (T2) 400/110kV, 250MVA Stâlpu;
- New Transformer 400/110kV, 250MVA Dârste;
- Installation of new reactive energy compensation coil in the new 400/110 kV Botoșani station;
- Installation of new reactive energy compensation coil in the new 400 kV Bistrița station;
- Installation of new reactive energy compensation coil in the new 400 kV Stâlpu station;
- Installation of two reactive energy compensation coils in the 400/220/110 kV power station Bucharest South;

❖ **Integration of the generated energy from new plants - Dobrogea and Moldova**
- Increase of transmission capacity 400 kV OHL Braşov-Sibiu South;

❖ **Integration of the generated energy from plants – other areas**
- Increase of transmission capacity 220 kV OHL Mintia-Alba Iulia;
- Reconductoring of 220 kV OHL Cetate – Calafat;
- Reconductoring of 220 kV OHL Alba Iulia – Cluj Florești;
- Reconductoring of connection 220 kV - Bucharest South – ramification Mostiștea;
- Increase of transmission capacity of 220 kV d.c. OHL Lotru- Sibiu South;
- New (AT4) Autotransformer 400/220kV, 400MVA Arefu.

A short justification of the new investment projects included in DP RET and their description can be found attached in the Annex entitled ‘List of new investment projects and the justification of including them in DP RET 2026-2035’.

Compared to the previous edition of RET Development Plan 2024 – 2033, the current edition of DP RET does not exclude investment projects.

Details regarding the compared analysis provided for in RET Development Plan 2026-2035 in relation with that in the approved RET Development Plan 2024 – 2033 are included in **Annex F-3**. Relevant information is presented for each project regarding the implementation degree, recorded progress level, as well as the causes that generated any deviations compared to the commissioning schedule initially established.

3. Presentation of RET development projects included in RET Development Plan 2026-2035

In order to ensure the corresponding sizing of the transmission grid in relation with the projections of the energy flows generated, imported, exported and transited, under the changes that occurred, two investment categories were included in RET Development Plan.

- Refurbishment of the existing power stations;
- RET Expansion by building new lines, increasing transmission capacity on existing lines, expansion of the existing stations and increase of transformation capacity in stations.

Refurbishment and modernization of the existing power stations

The power lines and stations that form the national electrical energy transmission network were most of them built during 1960 -1980 at the technological level of that time.

The technical status of installations was maintained until now at a corresponding level, both by the maintenance program developed as well as by a program of refurbishment and modernization of the installations and equipment.

Refurbishment projects which are in progress will be completed in the next ten years and new ones will be initiated in accordance with the priorities established based on the technical status and the importance of each station, as:

Project name
Replacing AT and T in stations-step 3: o AT 220/110 kV 200 MVA: Tg.Jiu North, Sărdănești, Suceava, Dumbrava, Grădiște (AT2); FAI (AT 2). o AT 220/110 kV 100 MVA Tihău; o Trafo2 110/20 kV 40 MVA in station Tg.Jiu North and Trafo2 110/10 kV 40 MVA in station Cluj East,Trafo 110/20 kV 40 MVA: T1 and T2 in station Cluj Florești; o T2 110/20 kV 25 MVA in station Sălaj, T2 110/20 kV 25 MVA in station Câmpia Turzii, T2 110/20 kV 25 MVA in station Turnu Severin East; Trafo T1 110/20 kV 20 MVA in station Turnu Severin East
Replacing AT 220/110kV 200MVA Stupărei
Refurbishment of 400/110 kV/m.t. station Smârdan
Pilot project- Refurbishment of 220/110/20 kV station Alba Iulia in digital station concept (Pilot project DigiTEL Alba Iulia)
Refurbishment of 110/20 kV station Medgidia South
Refurbishment of 400 kV station Isaccea (Step II)

Modernization of electrical energy transformation station 400/110kV Pelicanu
Modernization of installations of 110 and 400 (220) kV in Focșani West station
Refurbishment of 400/110 kV station Dârste
Modernization of metering – protection-control – command system 220 kV, 110 kV in the station of 220/110/20 kV and refurbishment of average voltage and internal services c.c. and c.a. in 220/110/20 kV station Ghizdaru.
Modernization of electrical energy station 400/110/20kV Drăgănești Olt
Modernization of electrical energy station 220/110/20kV Grădiște
Modernization of electrical energy station 220/110/20kV Fântânele
Modernization of electrical energy station 220/110 kV Calafat
Refurbishment of electrical energy station 220/110kV Baia Mare 3
Refurbishment of electrical energy station 400/220/110 kV Urechești
Refurbishment of electrical energy station 220/110kV Cluj - Florești
Refurbishment of electrical energy station 400kV Tânțăreni
Modernization of protection-control – command system in the stations: 220/110/20 kV Târgoviște, 400/110/20kV Oradea South, 220/110/20 kV Sălaj, 220/110 kV Paroșeni, 220/110 kV Pestiș, 400/110/20kV Mintia, 400kV Cernavodă, 400/110/20kV Tulcea West, 400/110kV Constanța North, 400/110/20kV Sibiu South, 220/110/20kV Gheorgheni, 220/110/20kV FAI, 400/110/20kV Gutinaș, 400kV Bacau South and Roman North, 400kV Calea Aradului, 400kV Gădălin, 400/110/20kV Bucharest South, 400/110/20kV Gura Ialomiței, 400/110/20kV Turnu Măgurele
Installation of two modern devices for reactive energy compensation in 400/220/110/20 kV Sibiu South and 400/220/110/20 kV Bradu stations
Replacing Transformer no. 4 - 250 MVA, 400/110 kV in 400/110 kV station Draganești Olt
Replacing Trafo 1 and Trafo 7 station Cluj East
Replacing Trafo 2 400/110kV station Smârdan
Replacing trafo T1 and T2 400/110kV Constanța North
Replacing AT2 200 MVA in 220/110/20 kV station Turnu Măgurele
Purchase and assembly of AT 4 400 MVA, 400/220 kV in 400/220/110 kV Mintia station
Purchase and assembly of a 100MVAr compensation coil in Porțile de Fier 400kV station
Optimizing voltage regulation and power quality parameter by installing the FACTS type equipment in Gutinaș, Suceava and Roșiori stations.
DigiTEL Next-Gen Power Grid – Improving the exploitation activities in the power stations of Transelectrica by using Digital Twin technology and the autonomous robotic systems
„Pilot project – Refurbishment of electrical energy station 220/110/20 kV Mostiștea in digital station concept with a low impact on the environment” - DigiTEL Green
Improving the operation of overhead electric lines by the expansion of the online monitoring system DigiTEL Smart Lines
New autotransformer (AT2) 220/110kV, 200MVA Stupărei
New transformer (T2) 400/110kV, 250MVA Stâlpu
New autotransformer (AT4) 400/220kV, 400MVA Arefu
New transformer 400/110kV, 250MVA Dârste

Other initiatives at Territorial Transmission Branch level

- Photovoltaic Electrical Plants (CEF) and energy storage installations intended for internal services supply in electrical stations of Transelectrica.

Safety of consumption supply

To ensure a high level of safety in consumption supply, a series of development and modernization projects of power transmission infrastructure are suggested. The projects included in this chapter have a direct contribution to the strengthening of regional energy security, adapting to the growth of urban consumption and the reliable integration of new energy sources into the national electricity system. The following projects are scheduled:

Project name
Increase of safety degree in consumers supply in the north –east area of Bucharest connected in 220/110/10 kV Fundeni station.
Increase of safety degree in consumers supply in the south area of Bucharest connected in 400/220/110/10 kV Bucharest South station
Installation two reactive energy compensation coils of approx. 50 MVAr each in 400/220/110 kV Bucharest South station, which could be connected in tertiary AT 3, 4 – 400 MVA, 400/220 kV or in the future Trafo 3, 4 – 250 MVA, 400/110 kV
Building new station 400/110kV Grozavești and two compensation coils 100MVAr +OHL 400 kV s.c. Domnești - Grozavești +OHL 400 kV s.c. Bucharest South -Grozavești
Building new station 400/110kV Fundeni and a compensation coils 100MVAr + OHL 400kV Fundeni-Brazi West +connection OHL 400kV Bucharest South -Gura Ialomiței input-output in 400kV Fundeni station
220/110kV station Dej/ Cuzdrioara of injection from 220kV OHL Baia Mare Iernut in RED
400/110kV Bistrița station of injection from 400kV OHL Suceava - Gădălin in RED and installation of a reactive energy compensation coil
400/110kV Botoșani station of injection from 400kV OHL Suceava - Bălți in RED and installation of a reactive energy compensation coil
New transformer 400/110kV Calea Aradului

Increase of take over capacity of the energy from Dobrogea and Moldova

To increase the transmission capacity from Dobrogea towards the rest of the system, various projects for the strengthening of transmission network were planned as below:

Project name
OHL 400 kV d.c. (1 c.e) Stâlpu-Braşov
Optimizing the operation of 400 kV OHL existing in SEN used for interconnection and to evacuate the power from Cernavodă NPP and from renewable energy plants in Dobrogea, by installing on-line monitoring systems.
Switching the Brazi Vest - Teleajen – Stalpu OHL to 400 kV, including: Purchase AT4 of 400 MVA, 400/220/20 kV Brazi West, and expansion works in 400 kV and 220 kV stations, in 400/220/110 kV Brazi West station.
400 kV d.c. (1c.e) OHL Constanta North - Medgidia South
Installation a reactive energy compensation coil in the new 400 kV station Stâlpu
Increasing transmission capacity on 53 km corridor with a smaller section on 400 kV OHL Cernavodă - Pelicanu
Increasing transmission capacity 220kV OHL Gutinaș-Dumbrava
Increasing transmission capacity 220kV OHL Dumbrava-Stejaru
Increasing transmission capacity 220kV OHL Fântânele-Ungheni
Increasing transmission capacity 400 kV OHL Bucharesti South-Gura Ialomiței
Increasing transmission capacity 400 kV Gutinaș – Brașov OHL
Increasing transmission capacity 220kV Bucharesti South -Fundeni OHL
Installing new trafo 3 400/110 kV Medgidia South

Installing new 3 400/110 kV Smârdan
Installing new 4 400/110 kV Tulcea West
Circuit 2 equipment for new OHL 400 kV Gutinaș - Smârdan
Power flow control devices for 220kV OHL Bucharesti South -Fundeni, 220kV OHL Urechești - Tg. Jiu North – Paroșeni - Baru Mare – Hășdat
Modern devices for voltage regulation (FACTS) in stations: 400kV Gura Ialomiței, 400kV Arad, 220kV Teleajen
Pilot Proiect DigiTEL Power Lines of the Future – Switching the 400 kV OHL Isaccea - Tulcea West from simple to double circuit
Transformer 400/110kV Suceava and 2 cells related to 400 kV, namely 110 kV
Increasing transmission capacity 400 kV OHL Braşov-Sibiu South

Integrating the power generated from other plants into SEN

To evacuate the electrical energy generated from renewable sources and to evacuate under safety conditions the power from HHP Porţile de Fier II, the following works are scheduled:

Project Name
Ostrovu Mare 220 kV station (new station)
Reconductoring 220 kV OHL Turnu-Magurele- Ghizdaru
Reconductoring 220 kV OHL Turnu-Magurele-Craiova North
Reconductoring d.c. 220kV OHL Bucharesti South -Ghizdaru (without connection Mostiștea)
Reconductoring 220kV OHL Lacu Sărat-Filești-Barboși-Focșani West-Gutinaș
Increasing transmission capacity 220 kV d.c. OHL Lotru- Sibiu South
Reconductoring 220 kV OHL Mintia –Alba Iulia
Reconductoring 220 kV OHL Alba Iulia – Cluj Florești
Reconductoring 220 kV OHL Cetate – Calafat
Reconductoring d.c. 220 kV OHL Brazi West – Fundeni
Reconductoring connection 220kV – Bucharesti South – ramification Mostiștea

Increasing cross border interconnection capacity

Project purpose	Project name
Increasing the exchange capacity in the west side of Romania	Switching the axis Porțile de Fier - Resita - Timișoara - Săcălaz – Arad to voltage of 400 kV. Step III: The 400 kV d.c OHL Timișoara - Săcălaz - Arad + 400/110 kV station Săcălaz + expansion of 400 Arad station.
	Reconductoring of axis 220 kV Urechești-Tg. Jiu North-Paroșeni- Baru Mare-Hașdat
	Switching the axis Porțile de Fier - Reșita - Timișoara - Săcălaz – Arad to voltage of 400 kV. Step II: OHL 400 kV d.c. Reșița - Timișoara - Săcălaz + 400 kV Timișoara station+ 110 kV Timișoara station.
	400 kV d.c. OHL Reșita - Timișoara - Săcalaz
	Circuit 2 equipment for OHL 400 kV Nădab-Bekescsaba
	400 kV d.c. OHL Timișoara - Arad
	Expansion of 400 kV Arad station and refurbishment of 110 kV Arad station.

	400 kV Săcălaz station and refurbishment of 110 kV Săcălaz station
	OHL 400kV Oradea-Jozsa
	OHL 400 kV Porțile de Fier - Djerdap circuit 2 – resulted from long term analyses within ENTSO-E.
	Reconductoring of 220kV OHL Porțile de Fier-Reșița
Increasing the exchange capacity in the south side of Romania (border with Bulgaria) for the transmission of power from renewable sources, intermittent installed on the coast of Black Sea to the consumption and storage centre	400 kV d.c. (1 c.e) OHL Smârdan-Gutinaş
	400 kV station Stâlpu (new station) + 110 kV cells modernization and average voltage.
Increasing the exchange capacity on the interface with Republic of Moldova and Ukraine	OHL 400 kV Suceava (RO)-Bălţi (MD) simple circuit
	OHL 400 kV s.c. Gădălin - Suceava (new OHL)
	Assembly new AT 400/220 kV in Roșiori station+ Modernization of protection-control-command system in 220 kV Roșiori station
	400kV Gutinaș – Strășeni OHL (new OHL)
	d.c. 400kV OHL Artsyz (UA) - Isaceea (RO)

The projects in the RET Development Plan 2026-2035 and the schedule can be viewed in the table below:

SECTION IA - Investments included in the Plan that have started (mature investments)												
No.	**Project name**	**Crt. ANRE**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**
A	**REFURBISHMENT OF EXISTING RET**											
1	Refurbishment of 400 / 110 / 20 kV Smârdan station	N										
2	Pilot Project - Refurbishment of 220/110/20 kV Alba Iulia station in digit station concept	N										
3	Refurbishment of Medgidia South 110 kV station	N										
4	Refurbishment of 400 kV Isaccea station *(step II - Refurbishment of 400 kV station)*	N										
5	Refurbishment of the energy transformation station 400/110 kV Pelicanu	N										
6	Modernization of 110 and 400 (220) kVinstallations in Focșani West station	N										
7	Modernization of 220/110 kV Calafat station	N										
8	Installation two reactive energy compensation coils in 400/220/110/20 kV Sibiu South and 400/220/110/20 kV Bradu stations	N										
9	Replacing Transformer no. 4 - 250 MVA, 400/110 kV in 400/110 KV Draganesti Olt station	N										

10	Replacing Trafo 1 and Trafo 7 Cluj East station	N										
10.1	Trafo 1 station Cluj East	N										
10.2	Trafo 7 station Cluj East	N										
11	Purchase and assembly of compensation coil100 MVAr in Portile de Fier 400kV station	N										
12	Optimizing voltage regulation and power quality parameter by installing the FACTS type equipment in Gutinaș, Suceava and Roșiori stations	N										
13	Modernization of metering – protection-control – command system 220 kV, 110 kV in 220/110/20 kV station and refurbishment of average voltage and internal services c.c. and c.a. in 220/110/20 kV Ghizdaru station	N										
14	Modernization of protection-control – command system in 220/110/20kV Targoviste station	N										
15	Pilot project – Refurbishment of electrical energy station 220/110/20 kV Mostiștea in digital station concept with a low impact on the environment	N										
16	Modernization SCCPA Isalnita station	N										
B	**OTHER INVESTMENTS AT THE LEVEL OF BRANCHES AND EXECUTIVE (annually planned)**											
1	**Other investments at the level of branches**	N										
2	Photovoltaic Electrical Plants (CEF) and energy storage installations intended for internal services supply in electrical stations of Transelectrica	N										
C	**SAFETY OF CONSUMPTION SUPPLY**											
1	Increase of safety degree in consumers supply in the north –east area of Bucharest connected in 220/110/10 kV Fundeni station	N										
2	Increase of safety degree in consumers supply in the south area of Bucharest connected in 400/220/110/10 kV Bucharest South station	N										
3	220/110kV station of injection from 220kV OHL Baia Mare Iernut in RED (Dej or Cuzdrioara)	E										
D	**INTEGRATING THE ENERGY GENERATED BY SRE AND NEW PLANTS - DOBROGEA AND MOLDOVA**											
1	Switching the Brazi West - Teleajen – Stalpu OHL to 400 kV , including: purchase of AT 400 MVA, 400/220/20 kV and expansion works in 400 kV and 220 kV related stations, in 400/220/110 kV Brazi Vest station	E										

1.1	400 kV OHL Brazi West - Teleajen - Stalpu	E										
1.2	Expansion of Brazi West station (including AT4)	E										
1.3	400 kV Teleajen station and refurbishment of 110 kV station	E										
2	400 kV d.c. (1c.e) OHL Constanta North - Medgidia South	E										
3	Increasing transmission capacity of 220 kV OHL Gutinas-Dumbrava	E										
4	Increasing transmission capacity of 220 kV OHL Dumbrava-Stejaru	E										
5	Circuit 2 equipment for 400kV d.c. OHL Gutinas - Smardan	E										
6	Optimizing the operation of 400 kV OHL existing in SEN used for interconnection and to evacuate the power from Cernavodă NPP and from renewable energy plants in Dobrogea, by installing on-line monitoring systems	N										
7	Increasing transmission capacity of 220 kV OHL Fantanele-Ungheni	E										
E	INTEGRATING THE POWER GENERATED FROM OTHER PLANTS INTO SEN											
1	Ostrovu Mare 220 kV station (new station)	E										
F	INCREASING CROSS BORDER INTERCONNECTION CAPACITY											
1	Switching the axis Porțile de Fier - Reșita - Timișoara - Săcălaz – Arad to voltage of 400 kV. Step II: OHL 400 kV d.c. Reșița - Timișoara - Săcălaz + 400 kV Timișoara station+ 110 kV Timișoara station	E										
1.1	Refurbishment of 110 kV Timişoara station and Switching the axis Porțile de Fier - Reșita - Timișoara - Săcălaz – Arad to voltage of 400 kV. Step II: 400 kV Timișoara station	E										
1.2	400 kV d.c. OHL Resita - Timisoara - Sacalaz	E										
2.1	400 kV d.c. OHL Timisoara - Arad	E										
2.3	Expansion of 400 kV Arad station and refurbishment of 10 kV Arad station	E										
3	400 kV d.c. (1c.e) OHL Gutinas - Smardan	E										
4	400 kV Stalpu station (new station)+ Modernization of 110 kV cells and average voltage	E										
5	400 kV s.c. OHL Gădălin - Suceava (new OHL)	E										
6	400 kV s.c. OHL Suceava - Balti (new OHL – for the length on the territory of Romania)*)	E										

7.2	Assembling new AT 400/220 kV in Rosiori station+ Modernization of protection-control-command system in 400/220 kV Rosiori station	E										
7.3	Reconductoring of the 220 kV axis Urechesti-Tg. Jiu North-Paroseni- Baru Mare-Hasdat	E										
G	COMMUNICATION, METERING,PROTECTION,CONTROL,COMMAND SYSTEMS											
H	Developing dedicated software, necessary to determine the amount of reserve using the probabilistic method.											
J	Power Quality Monitoring System, PQMS	N										
K	NFORMATION SYSTEMS AND TELECOMMUNICATIONS MANAGEMENT	N										
L	OTHER INVESTMENT EXPENSES											

SECTION IB – investments included in the Plan, are in an early stage of implementation or have a high degree of uncertainty (uncertain investments)

Nr. Crt.	Project name	Crit. ANRE	2026	2027	2028	2029	2030	2031	2032	2033	2034	3035
A	REFURBISHMENT OF THE EXISTING RET											
16	Replacing AT and Trafo in power stations *(step 3) 7 AT & 8 T*	N										
16.1	8 AT 220/110 kV in stations: Gradiste, Suceava, FAI, Dumbrava, Tg. Jiu North, Sardanesti, Tihau, Stupărei	N										
16.2	8 Trafo 110/20 kV in stations: Tn. Severin East (2 buc.) , Cluj Floresti (2 Buc.), Salaj, Campia Turzii, Cluj East, Tg. Jiu North.	N										
17	Refurbishment of 400 / 110 kV Dârste station	E										
18	Modernization of 400/110/20 kV Drăgăneşti-Olt station	N										
19	Modernization of 220/110/20 kV Gradiste station	N										
20	Modernization of 220/110/20 kV Fântânele station	N										
21	Modernization of SCADA in station 400/110/20 kV Oradea South	N										
22	Modernization of protection,control,command system in 220/110/20 kV Salaj station	N										
23	Refurbishment of 220/110 kV Baia Mare 3 station	N										
24	Refurbishment of 220/110 kV Cluj Floresti station	N										
25	Refurbishment of 400 kV Tantareni station	N										
26	Modernization of protection-control-command system in 220/110 kV Paroseni station	N										

27	Modernization of protection-control-command system in 220/110 kV Pestis station	N										
28	Modernization of protection-control-command system in 400/220/110 kV Mintia station	N										
29	Modernization of protection-control-command system in 400 kV Cernavoda station	N										
30	Modernization of protection-control-command system in 400/110/20 kV Tulcea West station	N										
31	Modernization of protection-control-,command system in 400/110 kV Constanța North station	N										
32	Modernization of protection-control-command system in 400/110/20 kV Sibiu South station	N										
33	Modernization of protection-control-command system 220/110/20 kV Gheorgheni station	N										
34	Modernization of protection-control-command system 220/110/20 kV FAI station	N										
35	Modernization of protection-control-command system 400 kV Bacau South and Roman North station	N										
36	Modernization of protection-control-command system 400/220/110 kV Gutinas station	N										
37	Modernization of protection-control-command system 400 kV Calea Aradului station	N										
38	Refurbishment of 400/220/110 kV Urechești station	N										
39	Modernization of protection-control-command system 400 kV Gadalin station	N										
40	Replacement of Trafo 2 400/110kV Smardan station	N										
41	Replacement of trafo T1 and T2 400/110kV Constanta North	N										
42	Replacement of AT2 200 MVA in 220/110/20 kV Turnu Măgurele station	N										
43	Modernization of protection-control-command system in 400/220/110 kV Bucharest South station	N										
44	Modernization of protection – control – command systems and automations in 400/110/20 kV Gura Ialomitei station	N										
45	Modernization of protection – control – command systems and automations in 220/110/20 kV Turnu Măgurele power station	N										
46	Purchase and installation of AT 4 400 MVA, 400/220 kV in 400/220/110 kV Mintia station	N										
47	DigiTEL Next-Gen Power Grid – Optimizing the exploitation activities in Transelectrica's stations by using Digital Twin technology and autonomous robotics systems	N										

48	Improving the operation of overhead electric lines by the expansion of the online monitoring system DigiTEL Smart Lines	N										
B	**OTHER INVESTMENTS AT THE LEVEL OF BRANCHES AND EXECUTIVE (annually planned)**											
3	**Other expenses at the level of branches**	N										
C	**SAFETY OF CONSUMPTION SUPPLY**											
4	Building new station 400/110kV Grozavești and two compensation coils 100MVAr +OHL 400 kV s.c. Domnești - Grozavești +OHL 400 kV s.c. Bucharest South -Grozavești	E										
5	Building new station 400/110kV Fundeni and a compensation coils 100MVAr + OHL 400kV Fundeni-Brazi West +connection OHL 400kV Bucharest South -Gura Ialomiței input-output in 400kV Fundeni station	E										
6	400/110kV Bistrița station of injection from 400kV OHL Suceava - Gădălin in RED and installation of a reactive energy compensation coil	E										
7	New transformer 400/110kV Calea Aradului	E										
8	400/110kV Botoșani station of injection from 400kV OHL Suceava - Bălți in RED and installation of a reactive energy compensation coil	E										
9	Installation two reactive energy compensation coils of approx. 50 MVAr each in 400/220/110 kV Bucharest South station, which could be connected in tertiary AT 3, 4 – 400 MVA, 400/220 kV or in the future Trafo 3, 4 – 250 MVA, 400/110 kV	E										
10	New Trafo 400/110kV, 250MVA Dârste	E										
11	Installation of a reactive energy compensation coil in the new 400 kV station Stâlpu	E										
12	Reconductoring of the d.c. 220 kV OHL Brazi West – Fundeni	E										
13	T2 (new) 400/110kV, 250MVA Stâlpu	E										
14	AT2 (new) 220/110kV, 200MVA Stupărei	E										
D	**INTEGRATING THE ENERGY GENERATED BY SRE AND NEW PLANTS - DOBROGEA AND MOLDOVA**											
8	Pilot Proiect DigiTEL Power Lines of the Future – Switching the 400 kV OHL Isaccea - Tulcea West from simple to double circuit	E										
9	400 Kv OHL Stalpu - Brasov, including interconnection to SEN (new line)	E										
10	Increasing transmission capacity in 400 kV OHL Cernavoda - Pelicanu (53 km)	E										
11	Increasing transmission capacity in 400 kV OHL Bucharest South-Gura Ialomitei	E										
12	Installing new trafo 3 400/110kV Medgidia South	N										

13	Installing new trafo 3 400/110kV Smardan	N										
14	Power flow control devices for 220kV OHL Bucharesti South -Fundeni, 220kV OHL Urechești - Tg. Jiu North – Paroșeni - Baru Mare – Hășdat	N										
15	Modern devices for voltage regulation (FACTS) in stations: 400kV Gura Ialomiței, 400kV Arad, 220kV Teleajen.											
15.1	Modern devices for voltage regulation (FACTS) in station: 400kV Gura Ialomiței	N										
15.2	Modern devices for voltage regulation (FACTS) in station: 400kV Arad	N										
15.3	Modern devices for voltage regulation (FACTS) in station 220(400)kV Teleajen	N										
16	Increasing transmission capacity in 400 kV OHLGutinas - Brașov	E										
17	Increasing transmission capacity in 220 kV OHL Bucharest South -Fundeni	E										
18	Reconductoring of the 220kV OHL Lacu Sărat-Filești-Barboși-Focșani west-Gutinaș	E										
19	Transformer 400/110kV Suceava and the related two cells of 400 kV and 110 kV	N										
20	Increasing transmission capacity in 400 kV OHL Braşov-Sibiu South	E										
E	**INTEGRATING THE ENERGY GENERATED BY PLANTS – OTHER AREAS**											
2	Reconductoring of the 220kV OHL Turnu Magurele-Ghizdaru	E										
3	Reconductoring of the 220kV OHL Turnu Magurele-Craiova North	E										
4	Reconductoring of the 220kV dc OHL Bucharest South -Ghizdaru (without connection Mostiștea)	E										
5	Increasing transmission capacity on 220 kV d.c. OHL Lotru- Sibiu South	E										
6	Increasing transmission capacity on 220 kV OHL Mintia-Alba Iulia	E										
7	Reconductoring of the 220kV dc OHL Brazi West – Fundeni	E										
8	Reconductoring of the 220kV OHL Cetate – Calafat	E										
9	Increasing transmission capacity on 220 kV OHL Cluj Florești-Alba Iulia	E										
10	AT4 (new) 400/220kV, 400MVA Arefu	E										
11	Reconductoring of the 220kV connection– Bucharest South – ramification Mostiștea	E										
F	**INCREASING INTERCONNECTION CAPACITY**											
2	Switching the axis Porțile de Fier - Resita - Timișoara - Săcălaz – Arad to voltage of 400 kV. Step III: The 400 kV d.c OHL Timișoara - Săcălaz - Arad + 400/110 kV station Săcălaz + expansion of 400 Arad station	E										
2.2	400 kV Sacalaz station and refurbishment of 110 kV Sacalaz station	E										

8	400kV OHL Portile de Fier - Djerdap circuit 2	E										
9	Building OHL 400kV Nadab-Bekescaba circ.2 and related works in station 400kV Nadab	E										
7	RO-HU interconnection (400kV Oradea-Jozsa OHL, new AT Rosiori, reconductoring of the axis 220 kV Urechesti-Tg. Jiu North-Paroseni- Baru Mare-Hasdat)	E										
7.1	400kV Oradea-Jozsa OHL	E										
10	Reconductoring of the d.c. 220kV OHL Portile de Fier - Resita	E										
11	400kV OHL Gutinas(RO) - Straseni (MD) on the territory of Romania	E										

SECTION II – Investments which are not included in the Plan; they will be included based on the confirmation of going through the decision stages necessary at the level of the interested parties

No.	Project name	Crt ANRE	2026	2027	2028	2029	2030	2031	2032	2033
II a	**TOTAL – Investments for CHEAP Tarnita connection**									
1	**400 kV d.c. OHL Tarnita - Mintia**	N								
2	**400 kV d.c. OHL Tarnita - Gadalin**	N								
3	**400 kV Tarnita power station**	N								
II b	**Romania-Georgia underwater cable**	E								
II c	**Transelectrica' new headquarters**	N								
II d	**HVDC direct current underground cable Albertirsa (HU) - Arad (RO) 525kV**	N								
1	HVDC direct current underground cable Arad (RO) – Constanța South (RO) 525kV	N								
2	HVDC direct current underground cable Arad (RO) – București South (RO) 525kV	N								
3	VSC conversion stations in Albertirsa, Arad, București South and Constanța South	N								
II e	**Switching the OHL Isaccea-Ukraine South (Primorska) AT 400 Kv installation of cell in Isaccea 400kV station**	**E**								

E = investment in essential fixed assets
N= investment in necessary fixed assets

-design stage
-execution stage

3.Evaluation of investment expenses for RET development

Evaluation of investment expenses for RET development was made based on some unitary cost indicators set for each level of voltage and equipment type (cells, transformers/autotransformers), including constructions, secondary circuits and metering, command, control, protection systems.

The unitary costs were estimated based on the costs made in investments projects developed after 2005. In cases where recent own experience was not available, information on estimated prices in consultants' studies was used.

Adopting the support mechanisms for renewable energy sources led to a large number of requests for connection, especially for regional wind plants which urged for a big investment batch to be included in RET DP in order to strengthen the transmission capacity. The rapid growth of connection requests for new renewable energy capacities puts major pressure on the expansion and the strengthening of the transmission network. But the approaches to build new electric lines are often delayed by long terms to obtain the agreements and authorizations (expropriations, issuing environmental permits, removal from forestry or agricultural use) which can last between 2 and 3 years. During this time, the urban certificates expire and the works of other entities can take place on initial route, requiring for the design and authorization process to be retaken.

Figure 1 presents the investments expenses values for RET development compared to the previous approved edition of RET development (2024-2033), on a timeframe of ten years anticipated in the current Plan (2026-2035).

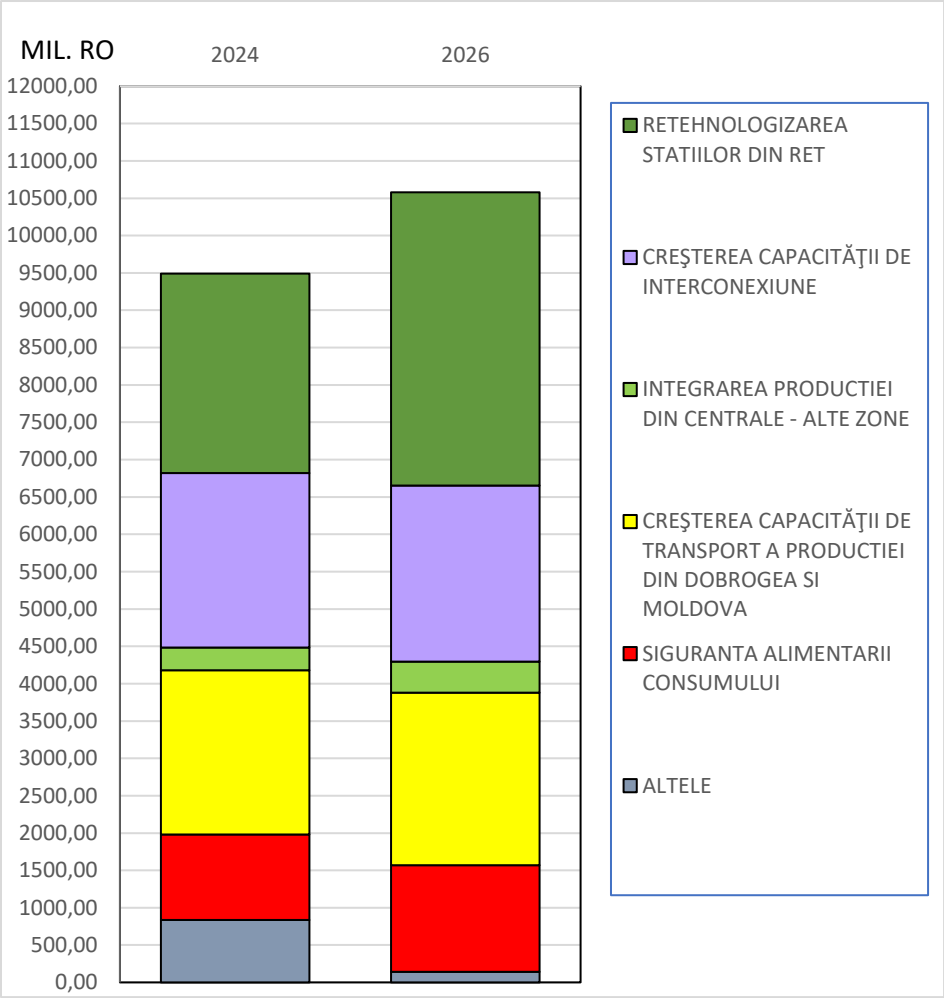

Fig 1- evolution of RET development plan for ten years –CAPEX volume and structure –

The structure of investment expenses for RET development from the point of view of the objectives aimed, is presented in fig 2.

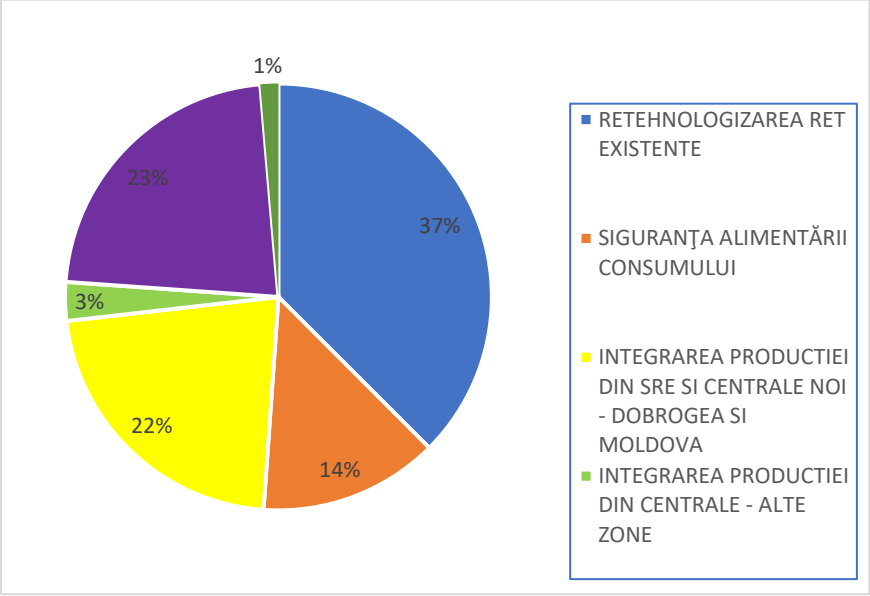

Fig 2 - The structure of investment expenses for RET development – 2026-2035

4. Financing sources for the development of the infrastructure operated by the Company

From Transelectrica's income sources, only the income from power transmission service regulated tariff together with tariffs generated by cross border interconnection capacity allocation represent financial sources that can be used to support the investments in the power transmission infrastructure.

In exchange, the income from the tariff for system technological service and the ones resulted from managing the balancing market are intended to cover operational costs related to these activities. These do not include investments' financial components since the system technological services are provided with the help of power capacities held by energy market participants, the own infrastructure of Transelectrica not being necessary. Therefore these incomes do not have a contribution to the Company's investments budget.

RET development **financing has the following components:**

Internal sources of Transelectrica (self-financing)

- The cash flow generated by basic operations (mainly by transmission tariff together with cashes generated by transmission capacity allocation on interconnection lines – used for RET investments financing which lead to the increasing of interconnection capacity with neighbouring systems).
- The cash flow generated by financial investments: cashed interest and dividends. The contribution of these sources is insignificant compared to the cash flow from basic operations.

External sources of Transelectrica (gained financing)

- The banking system – since its establishment (year 2000), Transelectrica built strong relationships with the local banks and the international financial institutions (BIRD, BERD, BEI), an important part of the investment program implemented by the Company in the last 16 years being financed by loans gained through the banking system. In the present there is a high interest shown permanently by credit institutions to attend the financing programs of infrastructure investment projects, the electrical energy sector being in the main areas targeted for financing.
- By corporate bond issues in local and international markets (issues in local currency or, as the case, euro) which have a determined period and a fixed financing cost for the entire period. The bond issues can represent and represents a strong alternative to investment program financing that can compensate the classic financing shortcomings.
- The financing can be gained both by formulas that involve the punctual ex-ante establishment of individual investment projects with dedicated financing (which was practised in the past in relation with BIRD, BERD, BEI) as well as by formulas that allow the use of borrowed funds for general financing needs of investments plans which does not limit the use of funds to a predefined projects list.

In completion of the funds ensured through regulated tariff, in order to implement its projects, Transelectrica also accessed non-reimbursable financing from European funds which has the effect of releasing the pressure from the regulated tariff. Thus:

- ✓ By signing the Financing Contract no. 146 from December 12, 2024, the 400 kV double circuit overhead electric line (OHL) Gutinaș-Smârdan project entered the step II of implementation since January 2025. This step is financed from the Sustainable Development Program 2021-2027 (cod MySMIS2021+: 326878), benefiting from a non-refundable allowance of 100,339,057.89 RON from Cohesion Fund. The initial step ended on December 31, 2024 (cod MySMIS2014+: 129245), with a financing of 138,136,986.79 RON from European Regional Development Fund.

Transelectrica received financing from the **Modernization Fund** for the following ongoing projects:

No.	Project title	Total eligible value approved (RON)
1	**Building a new 400 kV (d.c.) overhead electric line Medgidia South-Constanța North, equipped with one circuit* (eligible adjustments)**	111,873,780.08
2	**Building a new 400 kV (1c) overhead electric line Gădălin – Suceava, including SEN interconnection* (eligible adjustments)**	492,452,329.63
3	**Step II "Banat Axis", Building a new 400 kV overhead electric line Reșita – Timișoara/Săcălaz, Refurbishment of 110 /220 kV Timișoara station and switching to 400 kV ***	309,511,185.12
4	**Step III "Banat Axis", Building a new 400 kV overhead electric line Timişoara/Săcălaz – Arad, Refurbishment of 110kV Arad station and switching to 400kV and building the new station Săcălaz of 400 kV (eligible adjustments) ***	279,809,124.03
5	**Switching Brazi Vest-Teleajen-Stâlpu axis to 400 kV (eligible adjustments)**	248,478,774.69
6	**Pilot Project - Refurbishment of 220/110/20 kV Alba Iulia station in digital concept station (eligible adjustments)**	228,474,337.86
7	**Installing two modern devices of reactive power compensation in the 400/220/110/20 kV Sibiu South and 400/220/110/20 kV Bradu stations (eligible adjustments)**	254,651,970.65

8	**Optimizing the functioning of the 400 kV OHL existing in SEN, used in interconnection and for the power evacuation from Cernavodă nuclear plant and the renewable energy plants in Dobrogea, by installing on-line monitoring systems (SMART GRID type) (eligible adjustments)**	50,968,365.49
9	**RET digitization by installing 2 online systems for Metering and management of electricity measurement data on the wholesale market, and for the Monitoring of electrical energy quality**	88,806,776.94
10 (P62)	**DigiTEL Green Pilot Project - Refurbishment of 220/110/20 kV Mostiștea station in digital station concept, with a low impact on the environment**	240,582,164.42
11 (P262)	**DigiTEL Power Lines of the Future Pilot Project – switching the 400 kV Isaccea-Tulcea West OHL from simple to double circuit (eligible adjustments)**	318,893,345.47

- ✓ Transelectrica has also accessed financing through the **National Recovery and Resilience Plan, Component 16. REPowerEU, Investment 5.** Digitalization, efficiency and modernization of national transmission network which contains the following sub-investments:
  - **sub-investment 5a**. – Installing photovoltaic plants (CEF) and power storage installations intended for internal services installed in Translectrica stations (granting 29,557,000 euro);
  - **sub-investment 5b.** – refurbishment of SMART S.A. – subsidiary of Transelectrica (granting 18,240,000 euro)
  - **sub-investment 5.c. –** Optimization of the communication network and creation of a data centre – Teletrans S.A., subsidiary of Transelectrica (granting 8,440,200 euro).

Conclusions

This edition of the Development Plan of Power Transmission Network for 2026-2035 reaffirms Transelectrica's essential role in assuring the safe, efficient, sustainable operation of the National Power System. The Plan reflects an integrated approach of the current and future needs of the transmission network, correlated with energy politics objectives of Romania and with strategic directions set at European Union level.

By implementing the proposed projects, Transelectrica aims at consolidating the national electricity transmission infrastructure, facilitating the transition to a low-carbon economy, accelerated integration of renewable sources, and increase of the digitalization and network resilience.

Therefore, this document is not just a planning instrument but a long-term strategic action direction, intended to assure a modern, flexible electricity network, ready to answer the challenges of energy transition and of the sole European energy market.

Annex – list of investment new projects and the justification for including them in the Development Plan of RET 2026 – 2035

Project name	Project Description/ justification	Estimation of commissioning deadline
RET refurbishment/modernization		
Replacement of AT2 200 MVA in 220/110/20 kV Turnu Măgurele station	Autotransformer AT2 200 MVA in 220/110/20 kV in Turnu Măgurele station was commissioned in the year 1986. Keeping the transformer AT2 220/110/10,5 kV, 200 MVA in Turnu Măgurele station in operation would generate high maintenance costs, long period of times for repair and technical risks due to the age of over 37 years and the future works might not ensure the performance of the transmission service and the system service in accordance with the standards. In order to comply with the RET Technical Code and with ANRE orders, as well as to avoid some major impact events, the replace of the transformer must happen.	**2030**
Purchase ans assembly of AT 4 400 MVA, 400/220 kV in 400/220/110 kV Mintia station	Since the event on 24.09.2024 in 400/220 kV Roşiori station, belonging to Transelectrica - STT Cluj-Napoca, the AT2 400/220 kV 400MVA become unavailable due to an internal fault. Following the discussion within the Company, the replacement of the AT 2 Roşiori (out of order) was suggested with a similar transformer existing in 400/220/110 kV Mintia station, namely AT4 400/220 kV, 400MVA. Following these events the purchase and assembly of a new transformer in the 400/220/110 kV Mintia statin is necessary, replacing the current AT4, since a new Electrical Plant with mass combined cycle is to be connected to the Mintia station with installed power of 1738.20 MW.	**2027**
Modernization of 400/110/20 kV Drăgăneşti-Olt station	400/110/20 kV Drăgăneşti-Olt station represents the connection to the RED in the area and contributes to the evacuation of power from hydroelectric power plants in the Olt river basin. Most of the equipment and materials have exceeded their lifespan and show an advanced degree of physical and moral wear and tear. All equipment, as well as the design and implementation, are currently technically and technologically expired and non-compliant with the technical regulations currently in force. The estimated time to achieve this work is 2028-2030. Benefits: - improving the quality of electricity - reducing maintenance costs - improving the continuity of electricity supply	**2031**

Modernization of the protection – control – command system in 400/110/20 kV Tulcea West station	Replacement of SSCPA Tulcea West system (entirely) – being the latest version of Agile developed by ALSTOM before General Electric taking over ALSTOM, from commissioning (2014-2016) until now there have been various malfunctioning in exploring the SSCPA which were hardly remediated. Being the latest version of DC Agile developed by ALSTOM which does not exist (General Electric took over ALSTOM), the technical support compatible equipment does not exist anymore.	**2031**
Modernization of the protection – control – command system in 400/110 kV Constanța North station	SSCPA system of Constanța North transformation station is from the year 2004 (ABB project) when the entire transformation station was refurbished. Later, in 2017/2018 the central system SCADA was updated, the system having malfunctions again, the basis of the SCADA system being the initial one with the commissioning in 2004 (Micro SCADA). We must also take into consideration that Constanța North station will expand due to the construction of the Constanța North – Medgidia South OHL and so SSCPA.	**2031**
Modernization of the protection – control – command system in 400/110/20 kV Gura Ialomiței station	It is necessary to create a command-control system in accordance with the latest NTI in force of Transelectrica to: - fully remote-control the station both by the operative personnel as well as by the personnel within the level of the Remote – control center of Bucharest Branch and of the central and territorial dispatch centers; - continuity in sending information; - safe and stable access to consumers, producers and distribution operators to the transmission network in order to respond to current requests for safe function and operation of SEN. After implementing this investment project, the 400/110/20 kV power transformation station Gura Ialomiței will be equipped with a control – command –protection - automations system updated in accordance with the current requirements of Transelectrica, that includes the latest generation equipment with increased reliability, reduced maintenance costs, with real-time information transmission.	**2030**
Modernization of the protection – control – command system in 400/220/110 kV București South station	A control – command –protection - automations subsystem must be created in the Bucharest South station, according to the latest NTIs in force of Transelectrica. A synchronous phasor measurement and inter-zonal oscillation monitoring system related to the Bucharest South 400/220 kV Power Station must be purchased, compatible and integrable in the synchronous phasor measurement system existing at Transelectrica's level.	**2029**

Modernization of the protection – control – command system in 220/110/20 kV Turnu Măgurele station	A modern, numeric control – command –protection - automations system (SCCPA) is about to be installed in the 220/110/20 kV Turnu Măgurele station in accordance with the regulations and practices of Transelectrica. The system will be sized according to single-wire schemes at all voltage levels of the 220/110/20 kV Turnu Măgurele substation, taking into account expansions for future stages. The last update of the control – command –protection system in the 220/110/20 kV Turnu Măgurele station was in the year 2010.	**2030**
DigiTEL Next-Gen Power Grid – Optimizing the operation assets in Transelectrica's stations by using the Digital Twin technology and the autonomous robotic systems	Through this project the personnel involved in the exploitation, design and planning of Transelectrica's assets will have the possibility to visualize, build and manage the complex electrical systems, ensuring a safe an efficient operation on the entire span life. • In the first stage of this project all the 400 kV refurbished stations or the ones undergoing refurbishment with deadline in 2027 will be scanned. These scans will be validated, integrated and visualized in a dedicated platform, with the help of which the personnel involved in the operation and design activity will have the opportunity to manage complex electrical systems. • In the second stage, for a **power station** from the ones selected on the previous stage, inspection and analysis solutions based on autonomous robotic systems are developed (a drone and a robot).	**2028**
Optimizing the operation of overhead power lines by extending the online monitoring system DigiTEL Smart Lines- step 2	Currently the project 'Optimizing the operation of 400 kV overhead power line existing in SEN used in interconnection and for the power evacuation from the nuclear power plant Cernavodă and renewable power plants in Dobrogea by assembling online monitoring system (Smart Grid type)' financed 100% from the Modernization Fund is undergoing implementation. Within this project, savings of approximately 15,000,000 RON were recorded. BEI' proposal was to start a new project together with a new application to obtain financing. The main objective of the purchase and assembly of on-line monitoring systems is the raise of safety in operation of OHL through online diagnosis and evaluation of technical status of power lines, based on the data recorded in real time. If the non-reimbursable financing will not be granted, the implementation of the project will be held by the ANRE Order Project regarding the approval of the *Methodology to establish the performance indicators related to the development of a power network that shall promote the energy efficiency and the introduction of the energy generated by renewable sources which supports the implementation of the OHL monitoring subsystems.*	**2029**

Consumption supply security		
Reconductoring of d.c. 220 kV Brazi Vest – Fundeni OHL	The necessity of the project came out from the Development Study 2024-2038-2033, on the analysis made in the South Section. • Without the reconductoring of 220 kV d.c. Bucharest South – Fundeni OHL, the maximum power that can be generated at the South Section level is of **3169 MW,** while complying with the safety criteria of RET Code. • The reconductoring of 220 kV d.c. Bucharest South – Fundeni OHL will allow the increase of the power generated in D area by approx. **655 MW.** • The reconductoring of 220 kV d.c. Bucharest South – Fundeni OHL will lead to a drop by 0.4 MW of total losses at SEN level (in the VDV2028RD regime hypothesis).	**2030**
New Autotransformer (AT2) 220/110kV, 200MVA Stupărei	The necessity of the project came out from the Development Study 2024-2038-2033. **The sizing regime analysis** identified the necessity to install the second AT 220/110 kV Stupărei 200 MVA in order to avoid overload of AT1 220 kV Stupărei (125% Sn). • Without installing the AT2 220/110 kV Stupărei 200 MVA, the maximum power that can be generated at the area of 110 kV Vâlcea is of **417 MW** while complying with the safety criteria of RET Code. • installing the AT2 220/110 kV Stupărei 200 MVA will allow the increase of the power generated in the area of the 110 kV Vâlcea network by approx. **126 MW**, • installing the new AT 220/110 kV 200 MVA Stupărei will lead to a drop by 0.9 MW of total losses at SEN level (in the VDV2028RD regime hypothesis).	**2032**
NewTransformer (T2) 400/110kV, 250MVA Stâlpu	The necessity of the project came out from the Development Study 2024-2038-2033. **The sizing regime analysis** identified the necessity of this strengthening measure of C Area. • Without installing the T2 400/110 kV 250 MVA Stâlpu, the maximum power that can be generated at C area level while complying with the safety criteria of RET Code is **531 MW**. • installing T2 400/110 kV 250 MVA Stâlpu will allow the increase of the power generated in the C area by almost **409 MW**, • installing T2 400/110 kV Stâlpu 250 MVA leads to a drop by 1.5 MW of total losses at SEN level (in the VDV2033RD regime hypothesis).	**2030**

NewTransformer 400/110kV, 250MVA Dârste	The necessity of the project came out from the Development Study 2024-2038-2033. **The sizing regime analysis in G area** identified the overload of 110 kV Brașov – Bartolomeu OHL when the transformer 400/110kV Dârste trips, overloads on 220 kV d.c. Lotru – Sibiu Sud OHL, on 220 kV OHL from Cluj, Alba Iulia and Mintia area. For decongestion, it is necessary to install a second transformer 400/110kV in Dârste station. • Without installing the second transformer 400/110kV 250MVA in 400/110kV Dârste station, the maximum power that can be consumed at the level of the 110 kV Brașov – Dârste area, while complying with the safety criteria of RET Code is **369 MW.** • installing the second trafo 400/110 kV Dârste 250 MVA will allow the increase of the consumed power in the area of the 110 kV Brașov-Dârste network by almost **132 MW.**	**2030**
Installing a reactive power compensation coil in the new 400/110 kV Botoșani station	Installing the power compensation coils in the 400 kV Stâlpu, Bistrița, Botoșani and 400/220/110 kV Bucharest South stations is necessary to maintain the voltage stability and the safety in functioning of SEN, in the context of reducing the available means of voltage-reactive power regulation. The accelerated growth of distributed renewable power plants and prosumers, the withdrawal of thermal power plants and the reduction of classic reactive power sources have led to the emergence of high voltages, beyond the limits provided by the Technical Code of RET. Under these conditions, compensation coils become essential for avoiding frequent disconnections of 220 kV and 400 kV lines, for the safe integration of new renewable production capacities and for ensuring the stable operation of the national power system.	**2030**
Installing a reactive power compensation coil in the new 400 kV Bistrița station		**2030**
Installing a reactive power compensation coil in the new 400 kV Stâlpu station		**2032**
Installing two reactive power compensation coils in the 400/220/110 kV Bucharest South station		**2032**
Integration of production from new plants - Dobrogea and Moldova		
Increase of transmission capacity 400 kV Braşov-Sibiu South OHL	The project is necessary due to expiration of life span of overhead power lines and the non-conformities identified on active cables (wear, corrosion, loosening of fasteners). Moreover there are ongoing authorization and design in the area for new power photovoltaic plants and transformation station connected to 400 kV OHL, which imply the consolidation of the network in order to include these capacities. Also, the project ensures the safe evacuation of renewable energy and international flows, having a contribution in reliability increase and stable operation of SEN.	**2029**

Integration of production from plants – *other areas*		
Increasing the transmission capacity 220 kV Mintia-Alba Iulia OHL	The 220 kV overhead power lines in case exceeded their life span and have significant signs of degradation (wear, corrosion, loosening of fasteners), which affects the safe operation and the energy transmission capacity. At the same time, the project is essential for the transit of energy generated by the modernized Mintia thermal power plant, as well as for ensuring the evacuation of renewable energy and international flows, thus contributing to the increase of the adequacy and efficient integration of production into SEN.	**2030**
Reconductoring of 220 kV Cetate – Calafat OHL	The modernization of the 220kV OHLs in the area is necessary since there are many hydropower plants functioning and there are many renewable sources in advanced stages for connection in the Cetate – Calafat area.	**2030**
Reconductoring of 220 kV Alba Iulia – Cluj Florești OHL	The 220kV OHLs in this case **exceeded their normal life span** which leads to the gradual degradation of the construction elements. There have been identified significant non-conformities at the level of active conductors and accessories, manifested by wear, corrosion and loosening of fastening elements during operation. These problems generate an increased risk of defects and unplanned interruptions, affecting the safety of consumer supply and the stability of the SEN. At the same time, the increased frequency of corrective maintenance works determines additional costs and a reduced availability of the installations. This project **ensures the evacuation of renewable energy** due to the fact that in the areas of this OHL, significant projects for energy generation from renewable sources were authorized and are ongoing and the safe evacuation depends on the available transmission capacity. In the absence of modernization and increase in line capacity, there is a risk of congestion, limiting the access for renewable energy producers and, implicitly, losing opportunities to capitalize on this potential.	**2030**
Reconductoring of connection 220kV – Bucharest South – Mostiștea shunt	Reconductoring of 220kV d.c. Bucharest South– Ghizdaru was suggested in RET Development Plan 2022-2029, and the refurbishment program of the 220kV Mostiștea station mentions the second 220/110kV 200MVA transformation unit, so that the reconductoring of 220kV Mostiștea connection must be done.	**2030**
Increasing the transmission capacity 220 kV d.c. Lotru-Sibiu South OHL	The project aims at increasing the transmission capacity and electrical network reliability, ensuring the evacuation of the energy generated by UHE Lotru, currently focused on one circuit. Also. It is necessary to get involved since the life span of 220 kV overhead power lines exceeded and the significant non-conformities on active conductors (wear, corrosion and loosening of fastening elements). Also the project contributes to the integration of new photovoltaic power plants, giving support to the power transition and to safe operation of SEN.	**2029**

New Autotransformer (AT4) 400/220kV, 400MVA Arefu	The necessity of the project came out from the Development Study 2024-2038-2033. • Without installing the AT2 400/220 kV 400 MVA Arefu, the maximum power that can be generated at C area level while complying with the safety criteria of RET Code is **1776 MW**. • installing the AT2 400/220 kV 400 MVA Arefu will allow the increase of the power generated in C area by almost **96 MW**, • installing the AT 2 400/220 kV 400 MVA Arefu leads to a drop by 3.1 MW of total losses at SEN level (in VDV2033RD regime hypothesis).	**2031**