

Strategic planning for reliable energy systems at all levels

ENERGY AND POWER SYSTEM PLANNING DEPARTMENT

The scientific research work of the Energy and Power System Planning Department is aimed at a comprehensive and in-depth understanding of the energy sector as a whole and the study of power systems.



Scientific research work gives us a comprehensive understanding of the electric power system.



We plan the long-term development of the transmission and distribution network.



We provide complex forecasts of future electricity demand.

Our research work covers four core areas:

- general power engineering and forecasting the consumption of energy.
- electricity generation development planning.
- transmission networks development planning.
- distribution networks development planning.

The findings and studies of the research work form the basis for long-term planning of electricity systems and energy supply in general. In the context of such planning we also provide complex forecasts of future electricity consumption, identify the needs and capacities of electricity consumption from power plants and plan the further development of transmission and distribution networks.

WE RESEARCH AND PLAN ENERGY SYSTEMS

- Planning and optimising the development of distribution networks.
- Planning and optimising the development of transmission networks.
- Setting planning criteria for distribution networks.
- Developing the GREDOS software package for the analysis of distribution and transmission networks.
- Analysing international interconnections with commercial lines.
- Ensuring the integration of new generation resources into EES and optimising the development of generation companies.
- Developing programme tools for analysing the hydrological situation and potential generation of hydro power plants.
- Planning the costs of electric power production, transmission and distribution.
- Identifying the development of energy consumption and loads.
- Assessing the impact of traffic electrification and heating on the electric power system development.

MONITORING DISTRIBUTION NETWORKS WITH GREDOS

GREDOS is an advanced distribution network analysis software that we started developing in the Energy and Power Systems Planning Department in 1996. Using a single GIS software interface and various computer modules, we are able to bring together network analyses of all voltage levels in one place.

GREDOS Programme enables and ensures:

- calculation of power flows (AC/DC).
- optimal decoupling (losses, reliability).
- optimal overvoltage.
- reliability analyses.
- short circuit calculations.
- AMI interface (advanced measurement systems)
- DS analysis module (dispersed sources).
- optimal grid construction (sales agent method).
- GIS support (ESRI ShapeFile, MySQL).
- AutoCad DWG support (Taigha Open Design Alliance).



In-depth knowledge and research of the energy sector and individual power systems is the foundation of our insight into the future and is our tool for long-term electric power system planning.

