

## Preface

14th International Scientific Conference *Forecasting in Electric Power Engineering* took place from 26 to 28 September 2018 at the hotel "Ostaniec" in Podlesice, Poland on the Cracow-Częstochowa Upland <http://pe.el.pcz.pl/>.

The Polish Society of Theoretical and Applied Electrical Engineering PTETiS and Institute of Electric Power Engineering at Czestochowa University of Technology in the last twenty eight years have organized, in a close cooperation with eminent scientific and technical organizations, a cyclic scientific conference, whose scope are the current issues from a broad field of electric power engineering. During the conference the issues and dilemmas concerning not only Polish electric power engineering, but also those pertaining to EU countries, are discussed. The representatives of EU countries take an active role in the plenary talks.

Within the framework of the 14th International Scientific Conference, the Scientific Committee of the Conference *Forecasting in Electric Power Engineering* PE 2018 has decided to organize the event in the form of plenary sessions, where the papers shall be presented, as well as in the form of thematic panels, covering following issues:

- Forecasting in electric power engineering.
- Planning of power system development.
- Selected problems of power engineering (maintenance, measurements and control, management in power engineering).
- Forecasting in electric power engineering, new methods and forecasting techniques. Forecasting for the demands of electric energy market.
- Modelling and optimization, planning of system development and its limitations, investment effectiveness, uncertainty and risk in planning of development of electric energy system, risk management
- Influence of proprietary structure on operation and development of domestic power engineering system (PES).
- Permanent and transient work regimes of domestic PES. Stability and its improvement. Quality of electric energy.
- Impact of electricity generation on the environment.
- Power engineering safety. Present state and methods of improvement, investments, control algorithms, control theory and protection systems.
- System malfunctions, their possible occurrences in UCTE and in domestic power engineering system.
- Control of operation of domestic PES and its components. Technical, economic, organizational and proprietary structure driven aspects.
- Technical and organizational measures aimed at improving system controllability, including those based on law regulations and power electronics components.
- New technical solutions and experiments from the fields of control theory, measurements and monitoring.
- Sources of distributed and renewable generation and their impact on PES, supply reliability and quality of electric energy.
- Wind power stations and wind farms. Technical, economic, legal issues. Impact on PES.
- Operation of electric energy markets and system services in different technical, economic and organizational conditions. Benefits and costs of market mechanisms.
- New technologies of electric energy generation -technical aspects.
- Future of nuclear power plants in Poland. Political, social, economic, psychological, economic, technical and safety issues.
- Ecology-related issues concerning development of PES. EU project 3 x 20.
- Spatial conditions and territorial demands related to the development of power engineering infrastructure.

- Issues of design, operation and control of electrical machines and drives.

During the proceedings we took into consideration the forecasting problems for the electricity market, software useful for the power engineering, issues of the integration with the European Union and the role of distribution utilities, power plants and others enterprises in economic transformations. The forty-nine participants attended this year's sessions. The 46 papers were presented during the plenary sessions in 7 sections.

This year's conference hosted representatives from the following universities and research centers: AGH University of Science and Technology in Kraków, Poland, IGSMiE PAN Kraków, Poland, Lviv National University of Agriculture Lviv Ukraine, Częstochowa University of Technology, Poland, Silesian University of Technology in Gliwice, Poland, Warsaw Polytechnic, Poland, Wrocław University of Technology, Poland, PSE Innowacje SA, Poland, Technical University of Kosice, Slovak Republic, University of Technology and Humanities in Radom, Poland, and University of Technology and Life Sciences in Bydgoszcz, Poland.

The proceedings are the result of PE2018, which presents 25 accepted articles selected from 46 papers submitted to the conference. We hope the readers will find the proceedings interesting and valuable.

### **Members of the Organizing Committee of PE2018**