

RESULTS IN BRIEF OF THE FIRST SEERC REGIONAL CIGRÉ CONFERENCE

Words by the Chairman - Kresimir Bakic

Dear participants,

After a few years NC of CIGRÉ efforts in Central and South-Eastern Europe to uphold our Organization to a higher level of mutual cooperation, we just completed our first regional Conference. In the preparation of this event and during the initial activities 11 National Committees of CIGRÉ were involved.

The first South-East European regional CIGRÉ Conference took place in Portoroz, Slovenia on 7-8 June 2016 with the participation of more than 300 experts from 26 countries. It is a newly created regional section of CIGRÉ, which is **one of the four global regional sections** and bears the name of **SEERC** (South East European Region of CIGRÉ). The members of SEERC are the following Member States – CIGRÉ National Committees (NC): **NC Italy, NC Czech Republic and Slovakia, NC Austria, NC Slovenia, NC Croatia, NC Serbia, NC Montenegro, NC Bosnia and Herzegovina, NC Macedonia, NC Greece, NC Turkey, NC Romania and NC Ukraine**. This region covers a 2.5 million km² territory populated with about 250 million inhabitants, in this area there is about 350 GW installed capacity of power plants where the peak load of the electric power system amounts to around 200 GW in total. Annual electric energy consumption is about 1100 TWh.

Changes of the energy system structure by introducing a large number of renewable energy sources (RES-E), which are by their nature intermittent sources, requires a better cooperation between the participating sub-systems. The electricity market is evolving into a more complex and multi-level energy market status. Electric power systems are becoming heterogeneous and require more knowledge, with new ideas, which should be upgraded in the synergy of international cooperation. Central and South-Eastern Europe is a promising area with important energy potential - natural as well as human potentials. Therefore, our CIGRÉ, as one of the oldest international technical organizations involving stakeholders from the academic, equipment manufacturers and power utilities sphere, is determined to contribute to the future energy supply and demand side transition and electric power system development through suitable technology evolution.

Although in this part of Europe are running quite strong National CIGRÉ organizations, the intention was to promote better CIGRÉ cooperation on several operation levels. That way it may be expected to produce much better results being inescapable for the future challenging systems. Very quickly after the first discussions the conclusions brought to the realization of common interests on a broad front and in May 2013 SEERC was established under the patronage of the CIGRÉ Paris. The first meeting of of the SEERC Council was in January 2014 in Rome.

For the First SEERC Conference in Portoroz, Slovenia, the Technical Advisory Committee (SEERC TAC) selected the following preferential subjects (PS):

- A. Views on the future education procedures considering the new energy transition with prevailing electrical power sources, electric mobility and smart grids with ICT and sensors technologies.***
- B. Views on the development of the transmission system operators (TSOs) and Energy Markets in the region until 2030.***
- C. Regional Energy and Environmental policy focused on green technologies.***
- D. Submarine cable networks and ecological requirements.***
- E. The development of a Regional Electricity Market and***
- F. Innovation in infrastructure in the Region of Central and South-Eastern Europe.***

The Conference duration was planned to last two days covering first two PSs in the first day sessions and the last four PSs during the second day.

Opening ceremony speakers came from all parts of CIGRÉ stakeholders: academic, utilities and manufacturers side. All speakers welcomed the participants and emphasized the importance of this kind of regional CIGRÉ conferences and in such a way improved cooperation in southeast corner of Europe.

Invited speakers prepared lectures on three very interested topics for this Region:

- *On CIGRÉ's fingerprint on the Electric Power system* dealing with challenges with future electric grid, interaction with environment, global grid issues and visions of the new technologies; all as CIGRÉ working field, (**Klaus Froehlich, president of CIGRÉ**)
- *On Electricity Market development in the region of Energy Community*, for non- EU members. Very interesting lecture covering 8 countries (5 of them are members of SEERC) presenting legal and technical procedure for energy system accommodation with EU. (**Janez Kopac, Director of Energy Community, Vienna**)
- *On HVDC Transmission Technologies*, the topic which is of high interest in many countries due to Energy transition requirements. Presentation of state-of-art of HVDC Technology was very instructive and involving most recent techniques (**Michael Muhr, Professor at Graz University of Technology**).

Academic Forum Session

Quality of education and the needs for new technical profile personnel in the future will have a significant impact on the development of the energy transition process; therefore it is necessary to pay more attention to the quality of education. Framework of educational procedures for engineers working in the ever more complex energy systems of the future will need to be supplemented. It will need more interdisciplinary and collaborative techniques with other disciplines, such as economics, law, sociology and others.

The use of local and foreign languages in the terminology is to be wisely balanced and not to restrain the regional and European cooperation. Of course, even in the future systems the fundamental knowledge of physics and electrical system basics will play a key role in the introduction of new and promising technologies. Linkage of educational institutions and commercially oriented power utilities should be even more important, have been underlined in the Academic Forum discussions.

The special guests and speakers in the Academic Forum were:

- President of the Slovenian Parliament, Professor **Milan Brglez**,
- President of the Slovenian Academy of Sciences and Arts, **Academician Tadej Bajd**,
- President of the European Academy of Sciences and Arts, **Academician Felix Unger**.

System Development Session

Central and South East European Electric Power Systems have shown very interesting development plans of power infrastructure and also vision of operating markets. The presented reports almost from all countries of the Region pointed out as the most important issues – the incorporation of a large number of small Renewable Sources (RES) in the System, implementation of new technologies supporting re-designing of power structures, re-designing of the regional electricity market in the direction of better accessibility to market participants, better operation transparency and technological improvement of systems using more and more capable smartgrid techniques with new generation of sensor technologies as well as ICTs.

Four paper sessions – view of the results (after 72 oral presented papers)

Papers presented in the four topics sessions were of good quality introducing reports on many interesting research works done in Region (majority of papers) and also coming from other countries.

Topic 1 Session – On the Regional Energy and Environmental Policy; has shown variegated selection of papers and ideas in all countries in Region. Due to fact that R&D of this subject is significantly impacting further development of the Electrical systems, it is very important to continue discussion on this topic also in the next SEERC meetings. One of presented papers, which received the best paper award reported on long term (50 years in advance) strategy of low carbon Electrical sector development. Some of papers focused work on security of the system in the future considering the impact of large number of RES.

Topic 2 Session – On Submarine Cables Issues in Region; have shown a number of excellent papers with great achievements of the submarine projects in this Region. Projects from Italy and Greece in the Mediterranean Sea have been presented showing the excellence of achievements. New project of crossing Adriatic Sea between Italy and Montenegro was also presented in detail. Besides energy efficiency, some papers dealt also with Environmental issues. Paper from Montenegro dealing with Magnetic Fields of the Bipolar HVDC cable was selected to be published in the CIGRÉ Scientific and Engineering Review.

Topic 3 Session – On Regional Energy Market Aspects; was very well attended. Twenty interesting oral presentations have shown intensity of the Regional Market development and new ideas of re-designing of Market in accordance with new requirements of system development (RES intensity) underlining importance of system security of supply issues.

Topic 4 Session– On Innovation in Electric Power Infrastructure of the Region was a very busy session. Organizing Committee received more than 4 times more synopsizes than it was expected and restricted. It may be considered that R&D and innovation is the most important topic of engineers and experts in this Region. Interest for new power technology in Region is very high. Authors have shown novelties related to Overhead lines techniques, electrical mobility, battery storage systems and other primary subjects of contemporary Electric power systems. Characteristically for this Region is some kind of explosion of new ideas for novel energy system of the future. This proves good expectancy for future CIGRÉ activity.

Interactive posters (after 26 oral presented papers)

Interactive poster presentations have shown something new in the CIGRÉ conference practice enabling authors to present papers in 10 minutes reporting about the main subject of work and a following direct discussion with interested experts. Many papers have dealt with new technologies particularly monitoring systems implemented in Transmission utilities. Conclusion drawn from poster sessions showed a positive experience. With this approach and an immediate exchanging of thoughts and ideas concerning certain project seems advantageous. Some of presented project were presented for the first time ever.

Some thoughts and reflexions of the Conference Chairman:

» *In spite of many dissimilarities between nations, countries, histories, cultures and religions in this part of Europe, the **Electric Power Systems connect us all** and brings us many of good things, advantages of better living, comfort, prospects of faster social and economic development, wealth, etc. This is why energy experts in the region need to come together and build a reliable, resilient and safer electric power system for the good of our people. Now is the time of big energy system structural changes of a technological breakthrough. These better links between experts will be crucial in building a new and even more electric power prevailing energy system during promising energy transition. Incorporation of the large number of RES and the accompanying adaptation of the electrical grid to a new grid-outline, it is a great challenge. Together we can build a cost-effective, new, more complex interconnected power system than if we try to do it every one alone. The CIGRÉ platform is an ideal framework for cooperation*

due to well known “**spirit of CIGRÉ**”, what means a *free technical thinking* working in a number of expert groups, colloquia, meetings, seminars, conferences. At the same time we have seen and we admired a lot of voluntary work, which historically brought faster progress and success to all.”

»Many participants of the First SEERC Conference expressed gratitude and excitement looking at this Conference and emerged potentials for regional cooperation, so, from this reason I strongly hope that my successors (the leadership of the Region SEERC was transferred to NC CIGRÉ of Ukraine) will continue successfully as we did since the SEERC creation up to its first Conference”

At the end of the First SEERC Conference I would like to express my gratitude to all of you for your contributions, to authors for presenting papers, for fructuous discussions, particularly to NC Italy, NC Austria, NC Greece, NC Croatia, NC Serbia, NC Montenegro in chairing the sessions, for giving suggestions and helping in the best approaching of the Conference targets.

The special thankfulness for successfully Conference goes to our 23 sponsors, who participated not only for additional exchange of information on new products but also with excellent Conference feeling of comfort between their exhibition places.

Kresimir Bakic