

THE ROLE OF REGULATION AND POLICIES IN THE DEVELOPMENT OF SMART GRID SOLUTIONS - "2021 IEEE INTERNATIONAL FORUM ON SMART GRID FOR SMART CITIES"

SUMMARY AND STATEMENTS – CONFERENCE HIGHLIGHTS

22nd of March 2021, Carina Ioana ZIDARU & Marta STURZEANU

The representatives of the Romanian Energy Center (CRE) Association organized and participated in the Online Video-Conference organized by IEEE Smart Grid in collaboration with RWTH Aachen University. CRE coordinated the Tech Session 2 „*Shaping the Future*”, on Thursday, 18th of March 2021, from 17:00 – 18:30 CET (18:00 – 19:30 RO). The lineup was secured by high level representatives of International, European and National institutions and experts in the energy field. *The Role of Regulation and Policies in the Development of Smart Grid Solutions* and the development of synergies with innovation projects funded by the European Commission (EC) through the Horizon2020 program – [CROSSBOW](#) and [EDGEFLEX](#), projects in which CRE is partner, contribute to decisions in the process of the development of Smart Grids.

“[2021 IEEE International Forum on Smart Grids for Smart Cities](#)” is at its 3rd edition and it is a five-day Event. In this dedicated session under the title “*The Role of Regulation and Policies in the Development of Smart Grid Solutions*”, CRE covered a complete overview, addressing International, European, and specific perspectives on Regulations and Policies for Smart Grids.



Opening and moderating Tech Session 2 „*Shaping the Future*”, Mihai PAUN – Vice President of Romanian Energy Center invited speakers and panelists of European Associations and Organizations to discuss challenges related to Regulation and Policies in order to develop the Smart Grid Solutions, as well as Smart Regulation and Smart Metering, Digitalization and Cyber Security. “*Efficient regulation at the national level that focuses on longer term grid requirements and provides a fair rate of return should be thus encouraged*”, highlighted Mihai PAUN.

The valuable speakers and panelists of European Associations and Organizations that contributed to the important and pragmatic discussions within the session were Costas VOURNAS – Chair of the IEEE

WG Energy, European Public Policy Committee (EPPC); Vida ROZITE – Energy Policy Analyst, International Energy Agency (IEA); Bas KRUIJMER – Business Director Intelligent Network & Communication at DNV GL Netherlands; Zoltan NAGY-BEGE – Vice-President, Romanian Energy Regulatory Authority (ANRE); Mihai MLADIN – Projects Manager and Advisor, CRE; Manuel SERRANO MATOSES – Project Manager, ETRA; Iuliana CHILEA – Director, National Standardization Body (ASRO) and Dan PREOTESCU – Projects Manager and Advisor, CRE.

Costas VOURNAS – Chair of the IEEE WG Energy, EPPC expressed his views on the Renewable Energy Systems topic and pointed out the need for developing the industry standards that make Renewable Energy Sources (RES) and Storage Systems successfully interoperable to easily integrate them into the grid. EPPC recommends that the European Union (EU) work along the following lines of actions: reduce the cost of RES at the power levels and along the entire value chain; stimulate solutions for further exploiting RES; develop industry standards; extend the lifetime of RES and support the circular economy; include RES at the top of EU policy and political agenda.

“*A deep transformation of energy systems is required, with electricity playing a central role. Digitalization is key to overcome challenges and to leverage opportunities.*”, underlined **Vida ROZITE – Energy Policy Analyst, IEA** in her presentation “**Empowering Cities Towards Net-Zero Emissions**”. In this regard, Vida ROZITE pointed out that the digitalization can unlock untapped building sector efficiency and flexibility, can optimize mobility, and enable decarbonization of other sectors and can transform city energy systems. As a conclusion, Vida ROZITE summarized the main barriers encountered in this context and their potential solutions, as can be seen in the image on the right.



Barriers	Examples of potential solutions
Governance	Ensure integration across different levels of government.
Policies and regulation	Strengthen alignment of national and city level policies. Support integrated city planning. Implement behavioural change policies targeting cities.
Data	Create standard processes for data collection, storage and use. Strengthen cyber security and data protection.
Financing	Create dedicated local funding schemes, innovative finance mechanisms, public-private partnerships, new business models.
Capacity	Build specific training programmes to provide local administrators with right skills and knowledge to drive digitalisation. Support knowledge exchange.

International Governments and a wide range of other stakeholders play a fundamental role to foster digitally enabled energy transitions in cities

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Bas KRUIJMER – Business Director Intelligent Network & Communication at DNV GL Netherlands underlined in his presentation about cybersecurity in Utility Grid Operations that we can find through the Business Challenges the following aspects: reducing the overall operational costs, improving the performance, dealing with RES; the Digital Transformation together with Data Driven Systems and IT-OT Integration; EU and Country Regulations focusing on General Data Protection (GDPR) and Network Information Security (NIS).

Further on, **Zoltan NAGY-BEGE – Vice-President, ANRE** highlighted the support actions for Smart Grid Development and

pointed out the digitalization is the key and is the only option to deal with the trends. At the national level, the Vice-President mentioned several key Regulation or Deregulation related actions like: capacity limit raised from 27 to 100 KW in 2020 for prosumers; transition of the year 2021 to 15 minutes settlement period, single price rule and participation of consumers; as well as focus on aggregators and the demand side response.

Furthermore, based on the experience in EU funded Innovation Projects, CRE covered practical insights and the main results of **CROSSBOW** and **EDGEFLEX** - H2020 Projects. The CRE Association is constantly engaged in providing innovative solutions and new services for the Smart Grids domain as the addressed topic of regulation and policies in the development of Smart Grid solutions is a very relevant subject for CRE and its Members.



Mihai MLADIN – Projects Manager and Advisor, CRE, underlined the topic related to Regulatory Measures Supporting Smart Grids – Innovative Solutions in CROSSBOW and EDGEFLEX Projects. Mihai MLADIN presented the Regulatory Proposals supporting Smart Grids: New ancillary service - providing inertia; Virtual Power Plants (VPPs) – as new participants in the Frequency balancing market; Information and Communication Technologies (ICT) chapter requirements updates on existing NCs; New Voltage regulation market.

CROSSBOW Project aims at the successful deployment of a set of technological solutions offering Transmission Systems Operators (TSOs) higher flexibility and robustness through

better control of exchange power at interconnection points, new storage solutions, and better ICT and Communications.

EDGEFLEX Project aims to involve VPPs and energy communities in network management, by exploring optimal architectures for dynamic balancing and increasing flexibility.

"CRE believes in promoting flexibility, both on the supply and on the demand side. In this way an over-sized distribution grid is avoided and costs for the customers are saved. To achieve this flexibility, customers need to become actively involved and new commercial services established. This will only be successful if electricity retail prices and grid tariffs reflect the actual market and grid situations, pointed out Mihai PAUN, Vice President of CRE.

Further on, the addressed topics like Smart Regulation and Smart Metering; Renewable Energy Sources Integration to the Smart Grid; as well as Digitalization and Cyber Security followed during the Panel Discussion.

"Energy Systems is undergoing nowadays considerable challenges driven by Green Deal agenda and the digitalization process, calling for flexible and responsive networks. There is a need for defining basic standards for interoperability requirements and for assessing the data in the energy sector. The correlation between regulations and standards is crucial to enable an efficient city management", highlighted **Iuliana CHILEA – Director, National Standardization Body (ASRO)**.

Further on, the **Vice President of CRE, Mihai PAUN** highlighted that *"Currently, not only power, but information too will need to flow in both directions when we are referring about smart grids. Is not only electricity but is mainly data. And data now is considered the new oil. There are plenty of opportunities in this regard of data management"*.

"Importance of data management and investments are the main benefits of embracing the smart grid operation and deployment, both in urban and rural areas. Is important to reduce constraint of the large investment and to keep a good quality of service in terms of Information Technology (IT). It requires more control over the data and more processes for the grid", underlined **Manuel SERRANO MATOSES – Project Manager, ETRA**.

Dan PREOTESCU – Projects Manager and Advisor, CRE pointed out that *“Transfer of data becomes more important and crucial in the new power systems. Regulatory and Standardization Framework should be the facilitators for new trends and for new developments in the power system. These goals can be achieved in two main directions: by ensuring that the regulators and policymakers look forward to new opportunities and by harmonizing the new rules at regional level”*.

Moreover, part of the IEEE International Forum on Smart Grid for Smart Cities Event was also **EDDIE** Project – **“EDucation for Digitalization of Energy”**, funded by the European Commission under the ERASMUS+ Program, where CRE is partner. In this event, Eddie took part by setting up a Virtual Booth in the Projects Zone of the Smart Grid for Smart Cities. Participants can interact until 23 March with consortium representatives and discover information about the project objectives, current state and more other interesting details.



In this regard, the **EDGEFLEX** Project - **„Managing future grids with the new VPP Concept”**, funded by the EC through the Horizon 2020 program, was part of the IEEE International Forum on Smart Grid for Smart Cities Event. EDGEFLEX Project took part by setting up also a Virtual Booth in the Projects Zone in this event. The consortium representatives are willing to present the overview of the project, objectives, the ongoing work, and more other details to the participants, until 23 March.

Conclusions and Final Remarks

The outcome of this session will be part of an IEEE Position Paper to be further jointly published by CRE and RWTH in the Context Manager associated and available to all IEEE Smart Grids members.

“The importance of regulations and suitable regulatory framework in our smart cities is related to the large adoption of distributed renewables. Coordination is needed, it is the role of aggregators, professional services to promote the large adoption of renewables in our cities”, underlined **Manuel SERRANO MATOSES – Project Manager, ETRA**.

In his final remarks, the **Vice President of CRE, Mihai PAUN**, summarized the whole conversation, by pointing out that: *“New intelligent power system will require increased cooperation among all stakeholders in this area (DSOs, TSOs, regulators, public authorities, universities). In terms of digitalization, I think is very much linked to education and in this regard, CRE is partner in another project, called **EDDIE – “EDucation for Digitalization of Energy”** which aims to addressing the future role of education to contribute to the sustainable energy transition and digitalization.”*

CRE Association is an active and strategic partner together with its members and other potential members in international consortia for deploying energy projects funded by the EC, such as: **CROSSBOW, PHOENIX, TRINITY, EDDIE, EDGEFLEX, SUCCESS, RESERVE, NRG5, WISEGRID, SOGNO** and **CYBERSEAS**.

