





CRE and Synergies with EU H2020 Projects

On behalf of **Mihai PAUN** Vice-President Romanian Energy Center Mihai SANDULEAC

Technical Director EU projects Romanian Energy Center



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Romanian Energy Center - CRE At a Glance

Mihai PAUN Vice-President Romanian Energy Center

ROMANIAN ENERGY CENTER (CRE)





- The Romanian Energy Center is a non-governmental and non profit Association representing the interest of state-owned and private companies operating in the Romanian Energy Market, in relation with EU and National Institutions;
- Active in all relevant areas including: electricity, oil and gas, coal, renewables, energy equipment and services plus R&D&I, and Legal assistance;
- CRE contributes to the European and National decision-making process, promotes infrastructure investments and supports the transition to a decarbonized energy system.

CRE MEMBERS



22 Members - Public and Private Sector

- **ADREM INVEST**
- **BIOENERGY**
- **CEZ România**
- **Complexul Energetic Oltenia**
- CONPET
- **ELECTRICA**
- **ECRO**
- **E.ON România**
- **ELECON**
- **ELECTROALFA**
- **ENEL România**
- **ENERGOBIT**

- **EXIMPROD**
- **HIDROELECTRICA**
- INSTITUTUL DE STUDII SI PROIECTARI **ENERGETICE**
- **NUCLEARELECTRICA**
- ROMGAZ
- ROMPETROL
- **TELEKOM**
- TRACTEBEL ENGENEERING GDF SUEZ
- **TRANSELECTRICA**
- **TRANSGAZ**
- **TUCA ZBARCEA & ASSOCIATES**









































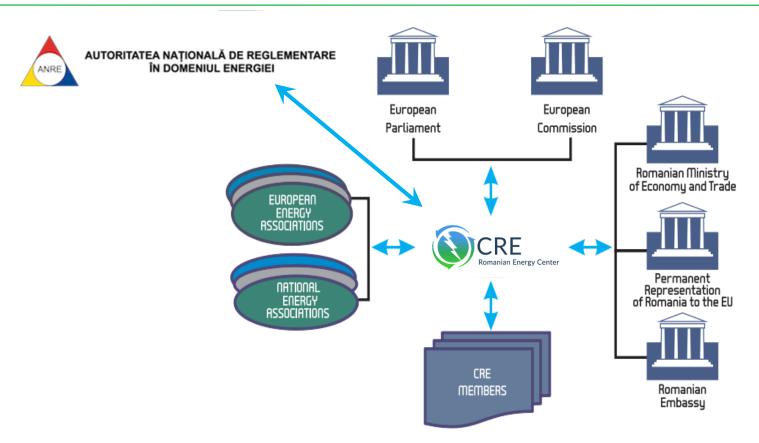






CRE: INTERACTIONS & REPRESENTATION





CRE ACTIVITY





Position papers to Romanian and European Energy Policy consultations



EU Projects





Events in Romania and Brussels



Coordinator of the Center for Dialogue and Cooperation 16+1 (CEE Countries + China)

CRE POSITION PAPERS

Moldova





- Position Paper of CRE on the Preparation of the New EC Directive on Renewables after 2020 (Link)
- Position Paper of CRE on the Modification of Energy Efficiency Law (<u>Link</u>)

CRE EVENTS – ROMANIAN ENERGY DAY 2018



"REGIONAL ENERGY SECURITY IN THE CONTEXT OF THE EUROPEAN INTERNAL ENERGY MARKET"

7th Romanian ENERGY DAY, Bruxelles, 5-6 June 2018

- OBJECTIVE To Inform the representatives of EU institutions in Bruxelles and to contribute to EU decision making process on energy priorities, projects & programs in Central and South-East Europe & in Romania;
 - To Facilitate investments in energy infrastructure, to support Energy Market Integration and to increase energy security in the Region;
 - To proactively contribute to the development of HV electricity, oil and gas corridors and to increase interconnection capacity in the Region;











CDCEP 16+1



Center for Dialogue and Cooperation on Energy Projects (CDCEP) 16+1



Cooperation between China and Central and Eastern European Countries

中国—中东欧国家合作

16+1 represents the economic cooperation enhancement format between China and Central and Eastern European Countries

Priority Domains/ Committees	Renewable Energy Sources	Smart Grids	Energy Efficiency	Coal	Nuclear Energy
Investments and Finance	WG	WG	WG	WG	WG
Commercial Cooperation	WG	WG	WG	WG	WG
Research and Development	WG	WG	WG	WG	WG
Legislation and Regulation	WG	WG	WG	WG	WG



16+1 Energy
Conference and Fair
8-10 November 2017
Bucharest





Objectives:

- Facilitate Dialog with key industry representatives and Dissemination of SUCCESS Project solutions for Securing the Smart Grid towards up to 100% Renewables
- Explore identified synergies with other EU H2020 Projects, and consultation with stakeholders on the preliminary results on regulatory aspects, as well as other relevant issues from the DSOs and TSOs perspective with focus on Network Codes and RESERVE Project results
- Address the next decade's challenges for the electricity grids, regulation and governance and provide insights and solutions through innovative projects and demonstrators





TOPICS:

- Interconnection of **Smart Grids** operating in different MS is already happening at TSO level but there is a need of more coordination between the TSOs and DSOs and also amongst DSOs -> SUCCESS Project - Implementing Security Solutions
- Need for more integration of the electricity T&D systems to enable digital and physical interconnections at the distribution level and cross-borders in the future
- Cyber-physical 5G-enabled Security of Smart Grids; Blockchains in the Energy Sector
- **Network Codes** for the transition towards 100% RES: Service Costs vs investments
- Synergies to be exploited amongst the Telecoms, Energy and Transport sectors in terms of ICT, digitalization and infrastructures
- Close collaboration amongst these sectors is needed in order to use resources efficiently and effectively.
- A Networking Exhibition on showcase RD&I Projects with a European scope implementation and results.

Slide No. 11

INNOVATION @ CRE - EU PROJECTS IMPLEMENTATION





Renewables in a Stable Electric Grid





SUCCESS - Securing
Critical Energy
Infrastructures





Wide scale demonstration of Integrated Solutions and business models for European smart GRID



Enabling Smart Energy as a Service via 5G Mobile Network advances





CROSS BOrder management of variable renewable energies and storage units enabling a transnational Wholesale market



SOGNO - Service
Oriented Grid for the
Network Of the Future



EXPERIENTE ÎMPREUNĂ.

CEZ ROMANIA





SUCCESS

Securing Critical Energy Infrastructures

Development of a new **Smart Meter named NORM** which includes **PMU functionality**, high data security based on **PUF technology**

Work on a **Security Operations Centre** and a a pan-European strategy for the detection of threats across Europe

Support Romanian Trial Deployment and assessment together with ELECTRICA



SUCCESS - Securing
Critical Energy
Infrastructures





NRG5

Enabling Smart Energy as a Service via 5G

Continue developments on NORM to include Blockchain Technology

Work on a neighbourhood Local Electricity Market

Work on enabling services with 5G connectivity

Integration of gas meters and add gas stream in the neighbourhood local market







WiseGRID

Wide scale demonstration of Integrated Solutions and business models for European smart GRID

Contributions related to **Data Privacy and GDPR** related aspects Contributions related to the big-data implementations of the project

Contributions to the **Smart Grid Solutions** in networks with high renewables penetration, including congestion management



Wide scale demonstration of Integrated Solutions and business models for European smart GRID





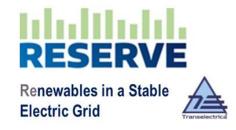
RESERVE

Renewables in a Stable Electric Grid

Analysis, scenarios and solutions for a stable grid with up to 100% renewables

Simulations and assessment of grids with low or no mechanical inertia and solutions for using **synthetic inertia**

Proposal for **new regulations** to support networks with up to 100% renewables







WISEGRID CONSORTIUM RECEIVES 'GOOD PRACTICE OF THE YEAR' AWARDS FROM COMMISSIONER FOR ENERGY, MIGUEL ARIAS CAÑETE

Technology and Design







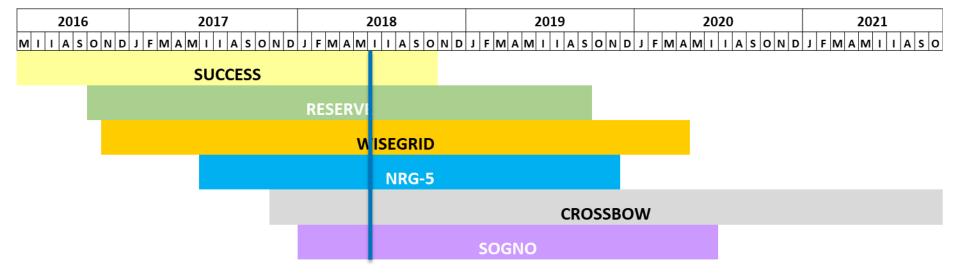
WISEGRID CONSORTIUM WINES 'TWO EU SUSTAINABLE ENERGY AWARDS FROM COMMISSIONER FOR ENERGY, MIGUEL ARIAS CAÑETE

- The Best Project in the Business and Citizen's choice categories, winning two <u>EU</u> <u>Sustainable Energy Awards</u>.
- The prizes recognise outstanding Innovation
 In Energy Efficiency And Renewables
- European Sustainable Energy Week 5 June Brussels (<u>EUSEW</u> 2018)



CRE – EU PROJECTS IMPLEMENTATION





CRE TEAM – EU H2020 PROJECTS









Catalin CHIMIREL



Mihai PAUN



Dan PREOTESCU



Mihai SANDULEAC



Thong VU VAN



Mihai MLADIN



Paul LACATUS



Mihai MACARIE

SMART SOLUTIONS - MYCITY



Electric Mobility

Heat Recovery System RES Integratio n as VPP

Innovation

Block Chain ("Neighbor. Exchange") Edge Computing Smart Nodes

Demand Response Solutions





Constanta Lighthouse City



Latest action held last week in Bucharest:

SUCCESS Project Open Day BRIDGE and Synergies with other EU Projects

28-29 June, Bucharest





Thank you for your attention!

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