

Strengthening Education for Sustainable Energy Transition and Digitalization – EDDIE project

Synergies with H2020 Innovation projects in Digitalization of the Energy sector
- EDGEFLEX and PHOENIX

Stakeholders Consultation Event – Webinar

Tuesday, November 17, 2020, 9.15 – 13.00 CET (10.15 – 14.00 EET)

Program

Free Registration

- 9.15 - 9.30 Connection to the Videoconference platform
- 9.30 - 9.35 **Welcome and Introduction - Objectives of the Event** | **Mihai PAUN** – Vice-President, Romanian Energy Center (CRE)

Introduction Session and Keynote Speeches on Energy and Digitalisation

- Moderator:* **Cristian COLTEANU** – Director Strategy and International Affairs - CRE
- 9.35 - 9.45 **H.E. Mrs. Luminita ODOBESCU** - Ambassador Extraordinary and Plenipotentiary, Permanent Representative of Romania to the European Union
- 9.45 - 9.50 **Manuel SANCHEZ JIMENEZ** - Team Leader Smart Grids - European Commission DG Energy
- 9.50 - 9.55 **Sabin SARMAS** – President - The Authority for the Digitalization of Romania - ADR
- 9.55 - 10.00 **Roberto ZANGRANDI** – Secretary General - E.DSO for Smart Grids

Session 1 - Education for Digitalisation of Energy

- Moderator* **Mihai MLADIN** – Projects Manager and Advisor - CRE
- 10.00 - 10.10 **Education for Digitalization of Energy (EDDIE) Project overview** | **Miguel Angel SANCHEZ FORNIE** - EDDIE Consortium Coordinator, Comillas University
- 10.10 - 10.20 **Identification of industrial challenges and skill needs in the energy sector within EDDIE framework** | **Panos KOTSAMPOPOULOS** - Senior Researcher, National Technical University of Athens
- 10.20 - 11.00 **Panel discussion on the identification of industrial challenges and skill needs in the energy sector**
Federico MILANO – Professor, University College Dublin
Alexandre JUNCKER – Technology Manager, ALPIQ Switzerland
Lorenzo PERETTO – Professor, University of Bologna
Mihai SANDULEAC – Professor, University Politehnica of Bucharest
Adrian FLOREA – Managing Partner at Trend Consult, VET Provider

11.00 – 11.15 **Questions and Debate**

11.15 - 11.25 **Coffee break/ Assigning participants to the two parallel sessions according to their options: EdgeFLEX and PHOENIX sessions**

Session 2: Synergies with H2020 research projects on the digitalization of energy

Session 2.1: EdgeFLEX Project - Providing flexibility to the grid by enabling VPPs to offer fast dynamics control services

Moderator: **Dan PREOTESCU** – Projects Manager and Advisor - CRE

11.25 - 11.35 **EdgeFLEX project presentation**

Gianluca LIPARI - Postdoctoral Research Associate, RWTH Aachen University

11.35 - 12.25 **Panel discussion: Synergies with EDDIE project, flexibility and regulatory framework assessment**

- How EdgeFLEX project and other similar projects in the area of energy digitalization can contribute to identifying the need for future skills that academia and vocational training providers should consider into their training programs (the link and potential synergies with EDDIE project and other similar projects)
- The role and added value of dynamically controlled VPP solutions, implications in power system flexibility and potential regulatory measures in the context of energy transition

Antonello MONTI – Professor and Institute Director, RWTH Aachen University

Ronnie BELMANS – CEO of EnergyVille, full professor at the KULeven, and Chairman of the board of directors of the Flemish regulator VREG

Mirela DIMA – Director Regulatory Affairs, CEZ Romania

Valeriu BINIG – Regulatory Director, ENEL Romania

Zoltan NAGY-BEGE – Vice-president of Romanian Energy Regulatory Authority

Laurent SCHMITT – Secretary General, ENTSO.E

Adrian GOICEA - Chair of the Supervisory Board, TRANSELECTRICA

12.25 - 12.45 **Questions and Debate**

Session 2.2: PHOENIX Project - Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks

Moderator: **Emiliano MARQUESINI** – EU Projects Coordinator, CRE

11.25 - 11.35 **PHOENIX project presentation**

Theodore ZAHARIADIS – Chief technical
Officer, Synelixis Solutions

11.35 - 12.25 **Panel discussion: Synergies with EDDIE project and cybersecurity across EPES**

- How PHOENIX project can contribute to the identification of future skills needs in the context of digitalization of the energy system
- Critical skills required for future “Cybersecurity EPES” Managers and Decision Makers
- Importance of Integrated and Coordinated Strategies for Cybersecurity across EPES (European Power Energy Systems)

Kirsten GLENNUNG – Projects Director, European Distribution System Operators for Smart Grids

Monica FLOREA – Head of Unit European Funds, SIMAVI

Bas KRUIJMER – Business Director Intelligent Networks & Communication, DNV-GL Netherlands

Massimo CRESTA – Director at ASM Terni SpA - Production Unit Terni Electric Distribution (TDE)

Rodica LUPU – CEO, Loop Operations

Cezar RUJAN – CEO, CEREBRO

Marius HARATAU – Digital and Data Privacy Consultant, CEO Factory 4.0

Tiberiu HIDI – General Director, AEM Timisoara

12.25 – 12.45 **Questions and Debate**

Conclusions from the parallel sessions

- 12.45 - 12.55
- **Session 1, Mihai MLADIN** – Projects Manager and Advisor, CRE
 - **Session 2.1, Dan PREOTESCU** – Projects Manager and Advisor, CRE
 - **Session 2.2, Emiliano MARQUESINI** – EU Projects Coordinator, CRE

12.55 – 13.00 **Final Remarks & Closing**

Mihai PAUN – Vice-President - CRE

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Introduction

EDDIE Webinar wants to respond to key questions raised by the 4th Revolution, addressing the main forces of change in ENERGY Transition: Low Carbon Objectives & Digitalization. Using EDUCATION lenses, we will look at the ENERGY Sector to find solutions for the LEARNING Transition, as well.

Synergies with **EdgeFLEX** and **PHOENIX** H2020 research projects in the digitalization of energy will allow a better understanding of the landmarks for the mandatory transformation in education as a sustainable response to the new and future requirements.

EDDIE (EDucation for Digitalization of Energy) – short description

The EDDIE project aims at creating a Sector Skills Alliance (SSA) by bringing together all the relevant stakeholders in the Energy value chain such as industry, education and training providers, European organisations, recruiters, social partners and public authorities. The main objective of this SSA is to develop a long-driven Blueprint for the digitalisation of the European Energy sector to enable the matching between the current and future demand of skills necessary for the digitalisation of the Energy sector and the supply of improved Vocational Education and Training (VET) systems and beyond.

The EDDIE project proposes an innovative strategic approach for Education in the European Energy sector as an industry-driven movement, where the skills emerge as a need of the real application instead of the classic approach that starts from fundamentals to reach application. This will be materialised in the Blueprint Strategy for the Digitalisation of the Energy value chain (BSDE) and will be demonstrated and validated in a pilot environment. An interdisciplinary approach is also sought, including green and soft skills, social science, economics and gender dimension, looking for synergies and collaboration with other blueprints and initiatives in Europe. The involvement of workers will be key for the success of the Blueprint, improving the attractiveness of the Energy sector by using participatory approaches and Information and Communication Technologies (ICT) methodologies.

The cooperation between the EDDIE partners (coming from 10 EU countries) and other relevant stakeholders will be the key for developing a Blueprint that encompasses global, societal, and technological current and future trends and needs. This strategic approach will reinforce the competitiveness of the European Energy Sector in an efficient and innovative way by creating a highly skilled workforce, fostering smart, inclusive and sustainable growth in line with the EU objectives and values.

Session 1 – Education for Digitalisation of Energy

Panel discussion on the identification of industrial challenges and skill needs in the energy sector

The two presentations that precede the panel discussions will provide both an overview of the project and a highlight of preliminary results regarding industrial challenges and the identification of skill needs in the energy sector, given the increasingly dynamic context of digitalization.

For the energy sector there is a number of occupations defined according to the European ESCO classification, and several skills are associated to each occupation, according to the current provisions. These are not very well correlated with the new realities of digitalization, and curricula and training programs in both academia and VET (Vocational Education and Training) also have gaps in what the industry requires in this context.

In the panel we will discuss these challenges to identify the skills relevant to the context of digitalization in the field of energy, the expert profiles participating in the panel allowing us to have a broad perspective on the subject, coming from academia, industry and VET.

Session 2.1 – EdgeFLEX Project

Panel discussion on synergies with EDDIE project, flexibility and regulatory framework assessment

The increased share of renewable energy in the energy mix is causing the energy market to change. The shift towards decentralised and renewable energy production calls for revising the concept of virtual power plants (VPPs): cloud-based control centres that aggregate the capacities of heterogeneous distributed energy resources for the purposes of enhancing power generation and trading or selling power on the electricity market. VPPs need to be flexible to respond to day-ahead and intraday markets and react quickly when it comes to providing ancillary grid services. The EU-funded EdgeFLEX project will explore optimal architectures that will enable VPPs to offer both fast and slow dynamics control services. The proposed solutions could ultimately lead to greater market penetration as well as stable and secure supply of renewable energy sources.

Onward, the cloud-based EDGEFLEX solutions, incorporating a high degree of digitalization, will emerge as services on the energy market, and their operation will require new skills to the actors involved, from both those who will integrate and provide these solutions and those to whom they are addressed.

The approach on the panel discussion will have two perspective:

1. The synergies with EDDIE project, more specifically on how EdgeFLEX project and other similar projects in the area of energy digitalization can contribute to identifying the need for future skills that academia and vocational training providers should consider into their curricula and training programs
2. EdgeFLEX project related aspects: the role and added value of dynamically controlled VPP solutions, implications in power system flexibility, and potential regulatory measures in the context of energy transition

Session 2.2 Panel – PHOENIX Project

Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks

The PHOENIX project is a European Union funded collaborative project improving the cyber security of the European electrical power energy systems (EPES), i.e. the so-called Smart Grid. PHOENIX aims to offer a cyber-shield armour to European EPES infrastructure enabling cooperative detection of large scale, cyber-human security and privacy incidents and attacks, guarantee the continuity of operations and minimize cascading effects in the infrastructure itself, the environment, the citizens and the end-users at reasonable cost.

The proposed approach on the panel discussion will have the following angles:

1. How PHOENIX and EDDIE projects can contribute to the identification of future skills needs in the context of digitalization of the energy system?
2. Importance of Integrated and Coordinated Strategies for developing Cybersecurity skills across EPES (European Power Energy Systems)
3. Critical skills required for future “Cybersecurity EPES” Managers and Decision Makers The Panel objectives is to share the opinion of the panel experts both from technical and market perspective, with the participants and stakeholders.

PHOENIX Project - Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks (Short Description)

The PHOENIX project is a European Union funded collaborative project improving the cyber security of the European electrical power energy systems (EPES), i.e. the so-called Smart Grid. PHOENIX aims to offer a cyber-shield armour to European EPES infrastructure enabling cooperative detection of large scale, cyber-human security and privacy incidents and attacks, guarantee the continuity of operations and minimize cascading effects in the infrastructure itself, the environment, the citizens and the end-users at reasonable cost.

Project Objectives

- Strengthen EPES cybersecurity preparedness.
- Coordinate cyber-incident discovery, sharing & response.
- Accelerate research & innovation in EPES cybersecurity via DevSecOps and innovative ML-based technologies.

FOCUS:

Protection of the European EPES via:

- i. Cybersecurity & Data Privacy by design and by innovation
- ii. cross-country Cybersecurity Information Sharing, realising NIS Directive
- iii. Realistic exploitation, penetration testing and verification/certification methodologies and procedures
- iv. Validation in 5 real-life Large Scale Pilots (LSP) across Europe.

APPROACH:

Protection of the European end-to-end EPES (Electrical Power and Energy System) (from energy production to prosumption) via **prevention, early detection and fast mitigation of cyber-attacks against EPES assets and networks** and from (intentional and unintentional, internal and external) human activities, **while protecting the utilities and end-users' privacy from data breaches by design.**