



Education for Digitalization of Energy

Deliverable 7.4

Report on events (v1)

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Abstract:

This report describes the events organized, hosted and attended by the consortium within the Task 7.3 to create awareness of the project concept and results and trigger open discussions, facilitate collaborations and to spark innovation in the education for digitalization of the energy sector domain. The activities organized in the first 24 months of the projects include the organizational and logistical enabling of communication and dissemination activities such as the participation in scientific and industrial events with exhibition stands, the organization of workshops and special session in conferences, the organization of stakeholder and advisory board meetings.

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04	FOSS Research Centre for Sustainable Energy – U. of Cyprus	FOSS	Cyprus
05	Politecnico di Milano – METID	POLIMI	Italy
06	Kungliga Tekniska Högskolan	KTH	Sweden
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15	NOVEL Group	NOVEL	Luxembourg
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17	Institute of Energy Economics at the University of Cologne	EWI	Germany

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Table of Contents

Definitions, Acronyms and Abbreviations	6
Executive Summary.....	8
1. Introduction	9
1.1. Objectives and outline of the deliverable.....	9
1.2. How to read this document.....	10
2. EDDIE Dissemination Activities	11
2.1. Events where EDDIE project has been presented	11
2.1.1. THE EUROPEAN GREEN DEAL: SMART GRIDS AT THE CENTER (webinar)	11
2.1.2. EDDIE at The First International Online Video-Conference On Energy T&D Networks.....	12
2.1.3. #ERASMUS DAYS – OCTOBER 2020.....	14
2.1.4. Strengthening Education for Sustainable Energy Transition & Digitalization (Stakeholders Consultation Webinar)	14
2.1.5. 2021 IEEE International Forum on Smart Grids for Smart Cities (Virtual Forum)	16
2.1.6. IEEE PES PowerTech 2021.....	18
2.1.7. Erasmus Days	19
2.1.8. ENLIT EUROPE 2021	20
2.2. Events where members of the EDDIE consortium took benefit of their attendance and mentioned EDDIE project.....	23
2.2.1. University of Sevilla Department of Electrical Engineering Webinar	23
2.2.2. ENTSO-E and E.DSO first InnoGrid virtual session on key role of electricity networks in the energy transition	23
2.2.3. European Vocational Skills Week	24
2.2.4. PLATform for Operation of distribution NETworks (PLATONE) Project Midterm Conference – "GROWING THE ENERGY TRANSITION"	25
2.2.5. ICAE2021-13th International Conference on Applied Energy (Conference)- "Sustainable Energy Solutions for a Post-COVID Recovery towards a Better Future".....	26
2.2.6. Energy Education in the Future.....	27
2.3. Events attended due to their importance and relevance and content to be considered within EDDIE. 28	28
2.3.1. Innovations for operating power systems with increasing shares of variable renewables (Webinar)	28
2.3.2. Pact for Skills – support for upskilling and reskilling under Erasmus+. Seminar Pact for Skills. Blueprint Sector Skills Alliances 2017-2020.	29
2.3.3. "Skill Building for the Energy Transition" (Webinar).....	31
2.3.4. "Remote Testing & EIRIE Platform" (Webinar)	32
2.3.5. Launch of the New Manifesto for Enhancing Digital Competences across Europe	33
2.3.6. EURASHE 30th Annual Conference - Professional Higher Education and sustainable development: creating a change that endures	34
2.3.7. Power Summit 2021 – Electric Decade	35
2.3.8. 4th E.DSO-ENCS-ENTSO-E Webinar on Cybersecurity "Enhancing our grid resilience"	36
2.3.9. 10th INNOGRID EDITION - "Living the Transition"	36
2.3.10. Workshop on Analyzing and Comparing VET Qualifications	38
2.3.11. SEFI Annual Conference 2021	39
2.3.12. "The Truth about Sector Coupling".....	39
2.3.13. Conference - Flexibility: The enabler for a clean energy future?	40
2.3.14. 3rd Coordinet Stakeholder Forum – Roadmap for a Green Deal fir market design	41
2.4. Scientific work and publications.....	42
2.4.1. Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets – Energies Journal (MDPI)	42

2.4.2. THE ROLE OF MOOCS IN THE NEW EDUCATIONAL SCENARIO: AN INTEGRATED STRATEGY FOR FACULTY DEVELOPMENT	43
2.4.3. Supporting Regulatory Measures in the Context of Big Data Applications for Smart Grids	44
2.5. EDDIE Advisory Board Meetings	45
2.5.1. 1 st EDDIE Advisory Board Meeting – November 2020	45
2.5.2. 2 nd Advisory Board Meeting – June 2021	46
2.5.3. 3 rd Advisory Board Meeting – November 2021.	48
2.6. Plan for future events	50
3. Conclusions.....	51
4. References.....	52
List of Figures	53

Definitions, Acronyms and Abbreviations

ATEE	Association for Teacher Education in Europe
CEDEFOP	European Centre for the Development of Vocational Training
CEER	Council of European Energy Regulators
CIREN	Centre for International Research of Environment and Development
DG	Directorate-General
DG-EAC	Directorate-General for Education and Culture
DSO	Distribution System Operators
EAEA	European Association for the Education of Adults
EASE	European Association for Storage of Energy
EC	European Commission
ECTS	European Credit Transfer and Accumulation System
ECVET	European Credit system for Vocational Education and Training
E.DSO	European Distribution System Operators
ENCS	European Network for Cyber Security
ENTSO-E	European Network of Transmission System Operators for Electricity
EP	Exploitation Plan
EPES	Electrical Power and Energy System
EQAVET	European Quality Assurance in Vocational Education and Training
EQF	European Qualifications Framework
ESCO	European Skills/Competences, Qualifications and Occupations
EU	European Union
EURASHE	European Association of Institutions in Higher Education
ICT	Information and Communication Technologies
IEA	International Energy Agency
IPR	Intellectual Property Rights
MOOCS	Massive Open Online Courses
PMU	Phasor Measurement Units

SEFI	European Society for Engineering Education
SSA	Sector Skill Alliance
TL	Task Leader
TSO	Transmission System Operators
VET	Vocational Education Training
I-VET	Initial Vocational Education Training
C-VET	Continuous Vocational Education Training
TVET	Technical and Vocational Education and Training
WAMC	Wide Area Monitoring and Control
WEC	World Energy Council
WP	Work Package
WPL	Work Package Leader

Executive Summary

D7.4 – Report on events (v1) highlights the activities carried out by EDDIE consortium to increase the project impact and relevance, to disseminate the achieved results among relevant stakeholders groups and to pave the way for exploitation to support the education in the energy system as it evolves very much affected by its transition and digitalization. This report is a comprehensive and living document which gives an introduction and outline of the achieved dissemination activities and the ones proposed throughout the duration of the project, the tools, actions, and channels to be used in the dissemination and outreach of the products results.

As can be found in this document, the EDDIE partners have participated and organized different actions during the initial 2-year of the project. These actions included organization of conferences and workshops, participation in conferences, workshops and fairs, social media dissemination, newsletters and flyer and poster preparation, non-peer-reviewed articles, and had heterogeneous audience and objectives. Moreover, these activities involved sometimes not only cooperation between the partners of the consortium but also collaborations with other projects and European initiatives, creating new synergies and networking. Additionally, some of the project Key Performance Indicators (KPIs) purposed at the beginning of the project were achieved.

Within EDDIE stakeholder mapping, relevant target groups were identified with the aim of establishment of a Sector Skills Alliance, to develop an industry-driven Blueprint Strategy for the education and training in the energy sector which is continuously affected by digitalization. This Blueprint is an industry-driven strategy that will meet and anticipate the skills' demands for the sustainable growth and digitalization for the European Energy sector. The relevant members of EDDIE stakeholder map were approached during private consultations and public events including the international advisory board meetings, stakeholder meetings, the participation to industry fairs and innovation events as well as through the active participation to initiatives promoted by the European Commission.

The EDDIE consortium will continue to disseminate the project outcomes to relevant stakeholders during the remaining of the project, creating or updating the dissemination material when necessary.

1. Introduction

This deliverable is the major outcome of Tasks 7.3 but has received contributions from all the tasks associated with WP7, whose overarching objective is to maximize the scientific, industrial, educational and societal impact of the project by creating awareness of the strategy of the blueprint, new directions and trends, technologies and the innovation activities within the project but also to engage actively with the public and the relevant stakeholders channeling and guiding feedback that will be incorporated in the strategic orientation of the project. From a wider perspective, D7.4 reviews also the communication and dissemination measures implemented within Tasks 7.1, 7.2 and 7.4 to foster specifically the support for matching the current and future demand of skills necessary for the digitalization of the Energy sector.

With this aim, the tools used by EDDIE, besides the web portal which serves as the first link to disseminate the project (<https://www.eddie-erasmus.eu/>), are the organization and participation in innovation and dissemination events like workshops, conferences, industrial fairs, and other events. Another important tool that will be used is the development and organization of educational activities aiming to demonstrate the feasibility and materialization of the blueprint strategy for the digitalization of the energy value chain (BSDE) while training professionals with new skills to manage the new context of energy systems.

The impact objectives of the communication and dissemination activities organized and attended by EDDIE can be sorted in multiple groups based on different target audiences:

- Dissemination towards relevant stakeholders groups in energy industry (Energy producers and suppliers, Network Operators, Industrial and ICT suppliers, both equipment and services) These activities include the participation to industrial conferences, fairs and innovation events, the private and public, stakeholders (manufacturers, energy providers, policy decision makers, etc.), as well as the commitment in initiatives promoted by the European Commission like BRIDGE and ETIP-SNET.
- Dissemination towards the education providers and research community (Academic, training, research, and life-long learning community). The activities in this category include the participation in international peer-reviewed scientific conferences, the organization of special sessions, the publication in highly ranked, prestigious, international peer-reviewed journals and magazines. The aim is to create awareness of the project work and assessments for skills gap identification, best practices at EU level.
- Dissemination towards the VET systems and life-long learning (Sectoral organizations in the energy and lifelong learning fields). EDDIE addresses the gaps in current educational programs and the need for professionals with new skills crossing energy and ICT fields by organizing a face-to-face and an online interdisciplinary course to promote the of BSDE.
- Dissemination towards other EU Erasmus+ Alliances projects and initiatives. The objective of these kind of activities and initiatives is to create a detailed view of the cross-cutting issues found during research projects, allowing to tackle the obstacles that innovation is facing, create synergies with other projects paving the way towards innovation for the digitalization of the energy sector.
- Dissemination towards Administration bodies and policy makers. Within this group of stakeholders, the aim is for presentation of the EDDIE concepts and results concerning the definition of a new framework for the education curricula and discussion about the implications for the educational providers. The objective is to raise awareness of the importance of the EDDIE topics and achievements among interested groups able to influence future decisions at National and EU level.
- EDDIE Advisory Board members. Within this group the focus is for comprehensive presentation of the ongoing work on the definition of new strategies for education of digitalization and discussion about the implications for the sector actors. Objective of the meetings is to collect feedback on the definition of blueprint strategy validated in the pilot trial and thereby ensure the European-wide acceptance and usability of the project outcomes.

1.1. Objectives and outline of the deliverable

The objective of this deliverable is to report about all EDDIE communication and dissemination events that took place in the first 24 months of the project, and whose organizational and logistical enabling has been coordinated by WP7 leader (CRE) within all tasks.

The description of the events is reported in Chapter 2, where the activities have been organized according to the following categories:

1. Events where EDDIE project has been presented
2. Events where members of the EDDIE consortium took benefit of their attendance and mentioned EDDIE project.
3. Events attended due to their importance and relevance and content to be considered within EDDIE.
4. Scientific work and publications.
5. EDDIE international advisory board meetings.
6. Plan for future events.

1.2. How to read this document

This is a stand-alone document that can be read on its own. However, more information regarding the methodology and philosophy of the activities listed in Section 2.2 (Stakeholder consultations events) can be found in Deliverable D7.2: “Dissemination and Exploitation plan”, which describes more in detail the communication and dissemination activities carried out in Task 7.1, 7.2 and 7.4 to promote EDDIE consistent work and blueprint strategy to relevant, stakeholders representing the whole energy value chain, education providers, VET systems, and the project advisory board.

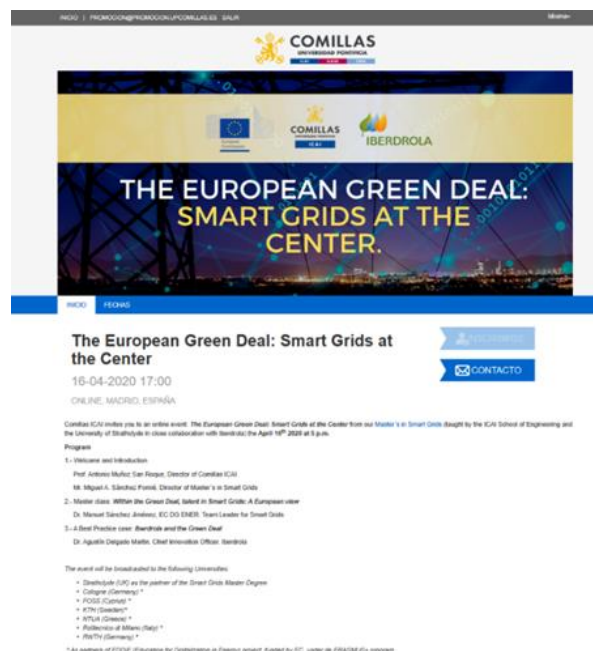
2. EDDIE Dissemination Activities

2.1. Events where EDDIE project has been presented

This section highlights and reviews the participation and organization of scientific and industrial events. The selected events include very well-known international fairs and conferences such as the European Vocational Skills Week, IEEE conferences, Innogrid etc.

2.1.1. THE EUROPEAN GREEN DEAL: SMART GRIDS AT THE CENTER (webinar)

- **Date:** 16 April 2020
- **Location:** online
- **Type of activity:** Organization of an Event
- **Organisers:** Comillas University
- **Estimated participants:** 120
- **EDDIE participants:** Comillas, NTUA, CRE
- **Type of participation:** Presentations, master classes, attendance
- **Presentation/Speech/ title:** The European Green Deal: Smart Grids at the Center.
- **Relation to EDDIE:** The event, programmed to be presential, became online as the COVID19 impact in all over Europe was around that time. Registered 121 people. The event was chaired by the principal of COMILLAS ICAI School of Engineering, Dr. Antonio Muñoz. In the Introduction, Miguel A. Sanchez-Fornie mentioned very specially EDDIE project as the best opportunity to align the needed education in energy as impacted by digitalization with the real request from the Industry. Master classes were given by Dr. Manuel Sanchez Jimenez, head of Smart Grids in DG Energy European Commission and Dr. Agustin Delgado Martin, Chief Innovation Officer if IBERDROLA. Both confirmed the importance of Education for the future European Energy System and the clear opportunity of EDDIE project. Their presentations are available, registering to EDDIE's Newsletter
- **Photo for the event:** Figure 2-1 and Figure 2-1.





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The EDDIE Project

Co-funded by the
Erasmus+ Programme
of the European Union

EDDIE is a **four-year** (starting January 2020) project creating a **Sector Skills Alliance (SSA)** to develop a long-driven **Blueprint for the education in the European Energy sector transformed by digitalization**. The Consortium is coordinated by **COMILLAS** and brings together **16 partners** from **10 EU Countries**.

Main challenge is to enable the **matching between the current and future demand of skills necessary along its digitalization and the supply of improved Education and Training in all levels systems and beyond**.

Digital Energy Education - Briefly

Title: Education for Digitalisation of Energy

Type of action: Sector Skills Alliance

Total Cost: € 3.995.690.00

Start Date: 01/01/2020

End date: 31/12/2023

Duration: 48 months

Project Web Site: www.eddie-erasmus.eu

Key Words: Digitalization, Energy, Education, SSA, VET

Project Coordinator: COMILLAS








Figure 2-1. EDDIE at the webinar "The European Green Deal: Smart Grids at the Center" organized by COMILLAS



Energy Transition
Technologies for the Decarbonization
and Electrification of the Economy
April 2020

INTERNAL USE

Figure 2-2. Master Classes given by Manuel Sanchez Jimenez (left) and Agustin Delgado (right).

2.1.2. EDDIE at The First International Online Video-Conference On Energy T&D Networks

- **Title:** Integrated Approach in the Management and Operation of Electricity Transmission and Distribution Networks
- **Date:** 30 April 2020
- **Location:** Online Event
- **Type of activity:** Scientific Conference, International Stakeholders Consultation
- **Organizers:** Romanian Energy Center (CRE)
- **Estimated participants:** 220
- **Website:** <https://www.crenerg.org/web-conference-sogno-eu-projects/>
- **EDDIE participant:** EDDIE Consortium
- **Type of participation:** Presentation, Panelists, Speakers, Participation to a Conference
- **Relation to EDDIE:** Romanian Energy Center (CRE) organized on the 30th of April 2020 the first International online video conference „*Integrated Approach in the Management and Operation of Electricity Transmission and Distribution Networks*”. The format of the Event was an International Stakeholders Consultation focusing on the preliminary results and synergies within six EU funded projects: SOGNO, WISEGRID, PHOENIX, CROSSBOW, EDDIE and DEFENDER.

The highlights of the conference: The future look of the Energy and the European Green Deal enabled by a Stable and Smart Grid with high RES were two of the main topics addressed by the two distinguished keynote speakers in the Opening Part of the conference.

The first session “*Innovative T&D Solutions and ICT Services for Grid Operators*”, started with the SOGNO project achievements (deploying more automated services in the MV and LV grids and Open Platform and Modular Services) demonstrations.

WISEGRID focused on the nine tools developed, standardization cooperation and citizen engagement for the EU Smart Grid of the future. PHOENIX project highlighted a self-learning and centralized ecosystem, to protect existing and new EPES components, from known and un-known cyber-threats, while ensuring data-privacy.

EDDIE project was introduced by the coordinator, prof. Miguel Ángel Sánchez Fornié who underlined the strategic approach for Education in the EU Energy sector as an industry-driven movement, where the skills emerge as a need of the real application. The session ended with a panel discussion underlining the expanded responsibilities of the DSO due to large penetration of renewables and specifically of the distributed generation for securing the Smart grids towards up to 100% Renewables.

Second session “*Developments in the Standardization for the Power Sector*” highlighted through its speakers that the current paradigm and goal of energy self-sufficiency is too expensive and the best way for the future being cooperation, the blockchain technology can democratize the energy markets and can support the production and consumption of green energy while improving the efficiency of energy exchanges. The conference ended with a panel discussion with the focus on the issues of software products

and implementation at national and regional levels, regulatory implications, the impact of digitalization on standardization and standardizing cyber security products and services.

EDDIE was firstly ever introduced to the potential stakeholders and general public during an international event with participants from 35 countries. (as can be seen in Figure 2-3).

Participants:



Figure 2-3. Statistics for the first international online conference organized by CRE

- **Photo for promoting the event:** In Figure 2-4 it can be seen some of the highlights related to EDDIE also during the panel session dedicated to the role of TSOs and DSOs for securing the Smart Grid towards up to 100% Renewables. For dissemination purposes, the association CRE shared a lot of information, documents and press releases for its members and participants via email and social media (shared by all the involved parties and projects including EDDIE). An example of such document is in Figure 2-5, but more information can be found on the dedicated webpage on CRE website, [here](#).



Figure 2-4. Integrated Approach in the Management and Operation of Electricity Transmission and Distribution Networks event



ROMANIAN ENERGY CENTER – CRE ORGANIZES THE FIRST INTERNATIONAL ONLINE VIDEO-CONFERENCE ON ELECTRICITY TRANSMISSION AND DISTRIBUTION

27 April 2020, Mihai PAUN

Romanian Energy Center (CRE) is organizing the first International Online Video Conference under the title „Integrated Approach in the Management and Operation of Electricity Transmission and Distribution Networks” on 30 April. The format of the Event is an International Stakeholders Consultation focusing on the preliminary results and the synergies within the European H2020 Projects **SOGNO, WISEGRID, PHOENIX, CROSSBOW, EDDIE** and **DEFENDER**.

More than 180 registrations of participants representing more than 120 organizations from over 35 countries are counted to date.

The main objectives of the event are: **Consultation with Stakeholders** on the Preliminary Results on Electricity T&D grid operation, regulation, standardization, as well as on New Solutions and Services proposed to TSOs and DSOs for improving the operation and security of the electricity grid through Digitalisation and Education; **Dissemination of the Projects Solutions** for the Management of Variable Renewable Energies and Storage Units enabling more Secure Smart Grid; **Presentation of integrated solutions and Business Models** for the integration of more RES into the European Smart Grid with increased protection and fast mitigation of the Cyber-Attacks against assets and the Networks of the Future; **Identify synergies within EU H2020 Projects** on Electricity T&D; **Consolidating** the European dimension of **Innovation and Development** in the Energy Sector.

Figure 2-5. CRE's press release for the first international online videoconference

2.1.3. #ERASMUS DAYS – OCTOBER 2020

- **Date:** 15, 16 & 17 October 2020
- **Location:** Online Event
- **Type of activity:** Participation
- **Organizers:** European Commission
- **Estimated participants:** 300
- **Website:** <https://www.erasmusdays.eu/>
- **EDDIE participant:** Romanian Energy Center (CRE)
- **Type of participation:** Presentation
- **Relation to EDDIE:** Launched in 2017 for the 30th anniversary of the programme, the ErasmusDays have become in four editions an unmissable European celebration for citizens and stakeholders of European projects. A new opportunity for EDDIE to increase its visibility among external stakeholders is the event ErasmusDays. It was a great moment to spread the word about our project, share our experience and showcase the impact of EDDIE work. For this year, all the activities were hosted online, and EDDIE took this opportunity to share all its dissemination activities under the hashtag #ErasmusDays. ErasmusDays is an initiative of the Erasmus+ French National Agency on the 30th anniversary of Erasmus+ and consists of a series of bottom-up events organized by various Erasmus+ programme players.

An example of activity within the ErasmusDays is the newsletter #3 (Figure 2-6) that was disseminated and exhibited using the logo of the event. On social media, the consortium used #ErasmusDays to share content.

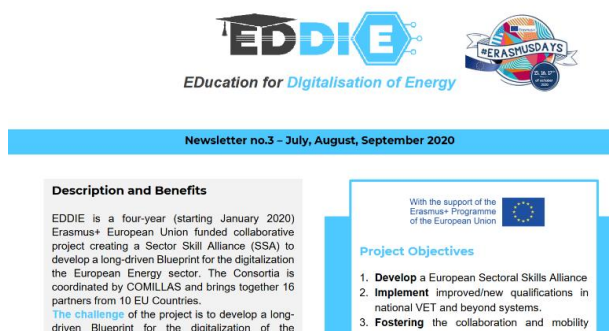


Figure 2-6. EDDIE's Newsletter #3 with ErasmusDays logo

- **Logo and Photo of the event:** Figure 2-7



Figure 2-7. ErasmusDays logo 2020

2.1.4. Strengthening Education for Sustainable Energy Transition & Digitalization (Stakeholders Consultation Webinar)

- **Date:** November 17, 2020
- **Location:** online
- **Type of activity:** Organization of an event (webinar)
- **Organizers:** CRE
- **Estimated participants:** 200

- **Website:** <https://www.eddie-erasmus.eu/events-eddie/eddie-webinar-evsw-2020/>
- **EDDIE participant:** EDDIE Consortium.
- **Type of participation:** Moderator, Speaker, Panelist
- **Relation to EDDIE:** EDDIE Webinar wanted 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 allowed a better understanding of the landmarks for the mandatory transformation in education as a sustainable response to the new and future requirements.

The event brought together industry representatives, policy and decision makers, researchers, practitioners as well as key representatives from the education sector to discuss challenges relating to digitalization, education, and their role for the future of the Energy Sector. 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. Therefore, during the event, EDDIE project addressed 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. During Session 1 – Education for Digitalization of Energy, dr. Panos Kotsampopoulos held the presentation *“Identification of industrial challenges and skill needs in the energy sector within EDDIE framework”*, and highlighted the assessments and conclusions for the investigation upon the skill gaps between education and the industry demands using surveys and questionnaires and providing useful conclusions about the skillsets and the sectors that showcase the biggest skill gaps.

For this event, a page was created on EDDIE website to disseminate the relevant information to all the stakeholders groups. The page can be found [here](#). After the event a lot of activities regarding dissemination and communication were carried out such as a press release on behalf of EDDIE consortium with the webinar highlights. A print-screen of this press release can be seen in Figure 2-8. All the activities were shared on the social media channel as well. In addition, CRE created a dedicated page on its website and shared a lot of content among its members via email and social media. (more information can be found [here](#)). An example of a press release on behalf of CRE disseminated among its members but also on social media can be seen in Figure 2-9.



Figure 2-8. EDDIE Webinar Highlights



Figure 2-9. Example of a press release on behalf of CRE

- **Photos of the event:** Figure 2-8, Figure 2-9, Figure 2-10.



Figure 2-10. Strengthening Education for Sustainable Energy Transition & Digitalization – Dissemination

2.1.5. 2021 IEEE International Forum on Smart Grids for Smart Cities (Virtual Forum)

- **Date:** March 17-23, 2021
 - **Location:** online
 - **Type of activity:** Participation to a Virtual Forum, Scientific Conference, Fair
 - **Organizers:** IEEE
 - **Estimated participants:** 200
 - **Website:** <https://ieeesg4sc.org/> and <https://www.eddie-erasmus.eu/events-eddie/eddie-at-ieee-sg4sc-2021/>
 - **EDDIE participant:** EDDIE Consortium
 - **Type of participation:** Moderator, Speaker, Panelists, Participants, Audience
 - **Presentation/Speech/ title:** Education in the digital within the energy sector: the EDDIE project (Professor Miguel Angel Sanchez Fornie); Emerging skill needs of the industry and skill offer of education providers on the digitalization of the energy sector (dr. Panos Kotsampopoulos).
 - **Presentation abstract:** Miguel Angel SANCHEZ FORNIE - EDDIE Consortium Coordinator, Comillas University addressed during his presentation the European context of the Digitalization of Energy Sector, underlining the EC initiatives in this regard, key information about the EDDIE project like the methodology to review national systems defined by three main stages: review legal framework of VET, review structuring and functioning of VET, review position of vocational training in relation to energy transition and digitalization. All of these will help the identification of legislation-related, territorial, or organizational challenges for future skills delivery required by energy transition and digitalization.
- Panos KOTSAMPOPOULOS - Senior Researcher, NTUA underlined in his presentation important aspects extracted from the Industry Survey and the Survey on Education and Training Providers conducted inside the EDDIE project. Challenges by sector were presented and the assessment of skill needs for the digital transformation by the industry and the skill offer by education and training providers led to the identification of skill gaps. It was found that the lack of adequate skills of employees is a very warning challenge and a useful insight for the EDDIE Project since the blueprint will attempt to mitigate those skill gaps. It also resulted that data management is also a significant challenge for the digital transformation. Some photos during the presentations can be found in the Figure 2-11.



Figure 2-11. Photos during the presentations of EDDIE Representatives during 2021 IEEE SG4SC

- Relation to EDDIE:** Additionally, EDDIE Project was part of the Project Zone of IEEE International Forum on Smart Grid for Smart Cities, by setting up a Virtual Booth. There, participants of the Smart Grid for Smart Cities event were able to interact with consortium representatives of the project and discover information about the project's overview, objectives, ongoing work and more other interesting details. The first-year brochure, the EDDIE project presentation video and relevant material have been uploaded on the platform for users to access them. For this event, a page was created on EDDIE website to disseminate the relevant information to all the stakeholders groups. The page can be found [here](#). After the event a lot of activities regarding dissemination and communication were carried out such as a press release on behalf of EDDIE consortium with the webinar highlights. A print-screen of this press release can be seen in Figure 2-12. All the activities were shared on the social media channels as well. In addition, CRE created a dedicated page on its website and shared a lot of content among its members via email and social media. (more information can be found [here](#)). An example of a press release on behalf of CRE disseminated among its members can be found [here](#). All the dissemination activities were carried out via email and social media. A print-screen of the document can be seen in Figure 2-13.



Figure 2-12. 2021 IEEE SG4SC event highlights



Figure 2-13. CRE's press release to its members for 2021 IEEE SG4SC events

During the event, EDDIE project was also represented by a virtual booth, where all the stakeholders could interact with the project and exchange knowledge. A photo of this virtual booth is in Figure 2-14.



Figure 2-14. EDDIE's Virtual Booth during 2021 IEEE SG4SC event

2.1.6. IEEE PES PowerTech 2021

- **Date:** 28 June -2 July 2021
- **Location:** online
- **Type of activity:** Organization of an Event
- **Organisers:** IEEE PES with the support of Comillas University
- **Estimated participants:** 300
- **Website:** <https://www.powertech2021.com/>
- **EDDIE participants:** Comillas, NTUA, CRE
- **Type of participation:** Two presentations, within an special session panel
- **Presentation/Speech/ title:** Title EDUCATING FUTURE POWER ENGINEERS

IEEE POWER TECH ANNUAL CONFERENCE was held mainly online in spite that it was programmed to take place in Madrid, Spain. This highly respected international event had this year the umbrella title "Power for the sustainable development goals". Within it, there was an special session in the form of a panel, moderated by professor Carlo Alberto Nucci (University of Bologna), entitled "Educating Future Power Engineers" where professors Panos Kotsampopoulos (NTUA) and Miguel A. Sanchez-Fornie (COMILLAS) gave presentations very much related to EDDIE, respectively, as follows:

- "Emerging Needs and Tools in Power System Education". The presentation mainly focused on the new educational and training needs, the results of EDDIE's industry and education surveys on the digitalization of energy, and the new technical tools for education and training. If we examine the latest educational and training needs, we come to the conclusion that there is a demand for new skills and expertise to foster the energy transition, a broader understanding of topics of different

- domains is necessary (i.e. electric power, heat, markets and definitely ICT where a holistic understanding is needed) as well as interdisciplinary approach and understanding of interactions. Finally, new educational approaches like lectures combined with simulations, e-learning, laboratories etc. are necessary. Regarding the skill gap surveys on industry and education we conclude that there is lack of adequate skills of employees which is a challenge for the industry and skill gaps converge towards data management and analysis, big data, cybersecurity, and programming & development competences
- “Education for Digitalization in Energy” with a detailed description of the Energy EU policy framework, objectives, content and achievements of EDDIE project.
 - **Photo for the event:** Figure 2-15

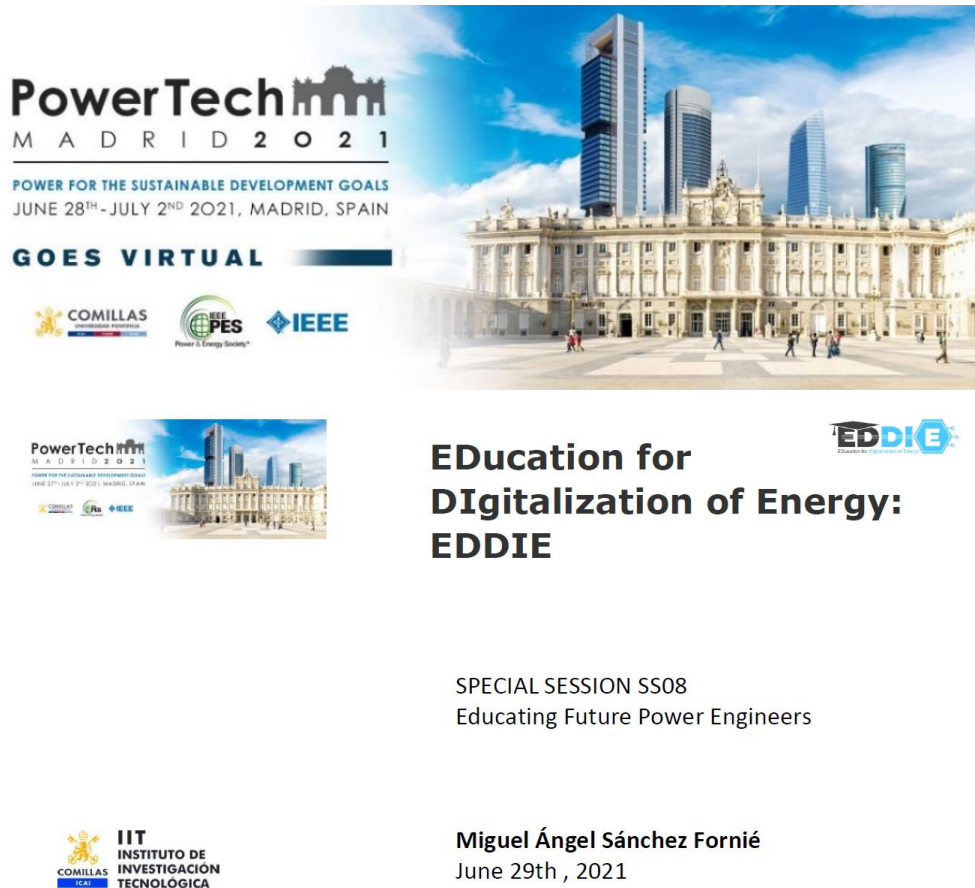


Figure 2-15. PES PowerTech 2021 banner and presentation of EDDIE.

2.1.7. Erasmus Days

- **Date:** October 14, 15, 16, 2021
- **Location:** online
- **Type of activity:** Participation to a Programme
- **Organizers:** EC
- **Estimated participants:** 2000
- **Website:** <https://www.erasmusdays.eu/>
- **EDDIE participant:** EDDIE Consortium
- **Type of participation:** Participant
- **Relation to EDDIE:** Since #ErasmusDays is an initiative of the Erasmus+ French National Agency on the 30th anniversary of Erasmus+ and EDDIE Project is part of the Erasmus+ funded projects, we celebrated

on 14, 15, 16 October the programme success and the benefits of the life-changing learning experience that offers. Institutions, organizations and individuals who have benefitted from an Erasmus+ funding could organize their events and share their project results. The options for these events were endless: from exhibitions, conferences and discussion panels to poetry slams or digital events like e-tournaments, webinars or podcasts, EDDIE consortium decided to share all its dissemination activities under the hashtag #ErasmusDays. It was a great moment to spread the word about our project, share our experience and showcase the impact of EDDIE work.

- **Logo of the event:** Figure 2-16



Figure 2-16 – Erasmus Days logo 2021

2.1.8. ENLIT EUROPE 2021

- **Date:** 30th of November – 3rd of December 2021
- **Location:** Hybrid Event
- **Type of activity:** Participation, Presentation, Fair.
- **Organizers:** Clarion Energy
- **Estimated participants:** 300
- **Website:** <https://www.enlit-europe.com/365>
<https://www.enlit-europe.com/live>
- **EDDIE participant:** EDDIE Consortium
- **Type of participation:** Presentations, Participation to a Conference

Relation to EDDIE: Enlit is a series of energy events and a community that for 365-days a year will collaborate and innovate to solve the most pressing energy-related issues. At the European edition, the Enlit community participated on the online platform and In-Person, in Milan from 30th of November through to 2nd of December, to meet and inspire each other and to develop their discussions and actions to take steps forward in the energy transition. Enlit Europe, the new unifying brand for European Utility Week and POWERGEN Europe, brought the best thought-leaders, innovators in the energy sector and beyond representing power generators, utilities, grid operators, energy companies, retailers, energy markets and energy traders to seize current opportunities, spotlight future ones, and inspire the next generation to participate in the journey.

Enlit Europe offers a dedicated platform to numerous EU Funded Projects contributing to the digitalisation of energy. During the Exhibition within the EU Projects Zone, dedicated presentations from CRE Representatives regarding the H2020 EU Funded Projects were addressed.

In the context of Enlit Europe, EDDIE Project was part of the EU Project Zone in the Online Environment, within Enlit 365 Platform and Community, together with other successful projects. This was an important opportunity to get in touch with the consortium, stakeholders and community members. EDDIE Project was also part of the EU Project Zone in Milan. CRE Representatives interacted with stakeholders and presented the overview, the objectives and mission of the EDDIE Project.

The representatives of the Romanian Energy Center Association (CRE) participated at Enlit Europe 2021 Event which took place on 30th of November – 2nd of December 2021. The Enlit Europe Event was organized In-Person in Milan, Italy and Online on Enlit Europe 365 Platform. The Romanian Energy Center

Association was present at the EU Projects Zone pavilion, representing more European H2020 Funded Projects, in which CRE is a consortium member "CROSSBOW" – "CROSS BOrder management of variable renewable energies and storage units enabling a transnational Wholesale market", "PHOENIX" – "Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks"; "EDGEFLEX" – "Providing flexibility to the grid by enabling VPPs to offer both fast and slow dynamics control services", "TRINITY" – "Transmission System Enhancement of Regional Borders by Means of Intelligent Market Technology".

For this event, on EDDIE website were posted relevant information under [Events](#) and [News](#) to disseminate it to all the stakeholders groups. After the event a lot of activities regarding dissemination and communication were carried out such as a press release on behalf of EDDIE consortium with the webinar highlights. A print-screen of this press release can be seen in Figure 2-17. All the activities were shared on the social media channels as well.

In addition, CRE shared a lot of content among its members via email and social media. An example of a press release on behalf of CRE disseminated among its members can be found [here](#). All the dissemination activities were carried out via email and social media. A print-screen of the document can be seen in Figure 2-18.



EDDIE Project at ENLIT EUROPE 2021

8th of December 2021

EDDIE project representatives participated and contributed at Enlit Europe 2021 Event which took place between 30th of November and 2nd of December 2021. The Enlit Europe Event was organized In-Person in Milan, Italy and Online on [Enlit Europe 365 Platform](#). CRE, COMILLAS and EDSO were at the EU Projects Zone pavilion, representing the European Commission (EC) Erasmus+ funded Project, "EDDIE" – "Education for Digitalization of Energy", that was part of Enlit Europe Event in the [Online Environment](#), but also part of the EU Project Zone, in Milan. Project representatives interacted with stakeholders and presented the overview, the objectives and mission of EDDIE. The partners also highlighted some of the project in their portfolios of implementation such as: "CROSSBOW" – "CROSS BOrder management of variable renewable energies and storage units enabling a transnational Wholesale market"; "PHOENIX" – "Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks"; "EDGEFLEX" – "Providing flexibility to the grid by enabling VPPs to offer both fast and slow dynamics control services", and "TRINITY" – "Transmission System Enhancement of Regional Borders by Means of Intelligent Market Technology".

[Enlit Europe](#), the new unifying brand for European Utility Week and POWERGEN Europe, brought the best thought-leaders, innovators in the energy sector representing power generators, utilities, grid operators, energy companies, retailers, energy markets and energy traders to seize current opportunities, spotlight future ones, and inspire the next generation to participate in this journey.

Figure 2-17. EDDIE's press release for ENLIT Europe 2021



REPRESENTATIVES OF THE ROMANIAN ENERGY CENTER ASSOCIATION WILL ACTIVELY PARTICIPATE AT ENLIT EUROPE 2021

24th of November 2021

The representatives of the Romanian Energy Center Association (CRE) will participate and will actively contribute at Enlit Europe 2021 Event which will be organized on 30th of November – 2nd of December 2021. The Enlit Europe Event will be organized In-Person in Milan, Italy and Online on [Enlit Europe 365 Platform](#). The Romanian Energy Center Association will be present at the EU Projects Zone pavilion, representing the following European H2020 Funded Projects, in which CRE is a consortium member (click on each Project to access the relevant ENLIT EU Projects Zone page):

- 1) "CROSSBOW" – "CROSS BOrder management of variable renewable energies and storage units enabling a transnational Wholesale market" (stand 12.EU29);
- 2) "PHOENIX" – "Electrical Power System's Shield against complex incidents and extensive cyber and privacy attacks" (stand 12.EU12);
- 3) "EDGEFLEX" – "Providing flexibility to the grid by enabling VPPs to offer both fast and slow dynamics control services" (stand 12.EU25);
- 4) "TRINITY" – "Transmission System Enhancement of Regional Borders by Means of Intelligent Market Technology" (stand 12.EU28).

The European Commission (EC) funded Project, "EDDIE" – "Education for Digitalization of Energy", in which CRE is also a partner, will be part of Enlit Europe Event in the [Online Environment](#).

Enlit is a series of energy events and a community that for 365-days a year will collaborate and innovate to solve the most pressing energy-related issues. At the European edition, the Enlit community will come together on the online platform and In-Person, in Milan from 30th of November through to 2nd of December, to meet and inspire each other and to develop their

Figure 2-18. CRE's press release on ENLIT Europe 2021

- **Photo from the event:** Some photos from the live event in Milan can be seen in Figure 2-19.



Figure 2-19. EDDIE at ENLIT Europe 2021

In addition, the EDDIE was part of the online platform, included in the EU project zone marketplace where the stakeholders and general public could interact with the project representatives, via chat or via email. (a print-screen of EDDIE virtual booth can be seen in Figure 2-20.)

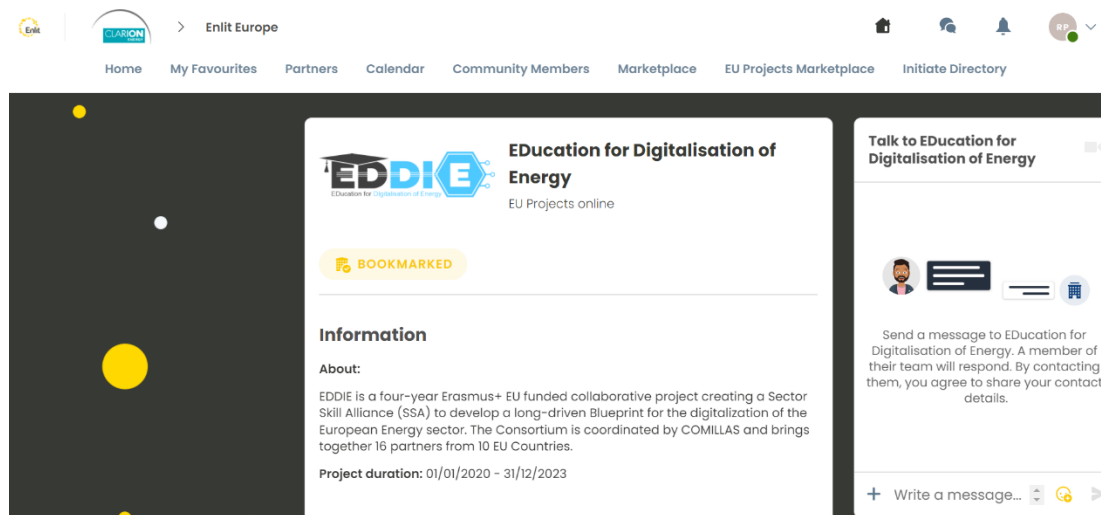


Figure 2-20. EDDIE's virtual booth at Enlit Europe 2021

2.2. Events where members of the EDDIE consortium took benefit of their attendance and mentioned EDDIE project.

2.2.1. University of Sevilla Department of Electrical Engineering Webinar

- **Date:** 6 November 2020
- **Location:** Online
- **Type of activity:** Webinar
- **Organisers:** University of Sevilla Department of Electrical Engineering
- **Website:** <http://departamento.us.es/ielectrica/wp-content/uploads/2020/10/WEBINARS-Dr.-Panos-Kotsampopoulos.pdf>
- **Participant:** NTUA
- **Type of participation:** Presentation by Panos Kotsampopoulos
- **Presentation/Speech/ title:** New trends in power system education: HIL simulation, remote/virtual labs, interactive notebooks, and advanced educational methods.
- **Presentation abstract:** The presentation mainly focused on the new and advanced educational methods while presenting the results of EDDIE's industry and education surveys on the digitalization of energy, and the new technical tools for education and training.
- **Relation to EDDIE:** Assessment of the new and advanced educational methods and identification of the skill gaps between education and training skills offer and the industry demands in order to achieve better education and training for the digitalisation of energy.
- **Photo from the event:** Figure 2-21.



UNIVERSIDAD DE SEVILLA

Departamento de Ingeniería Eléctrica
E.T.S. Ingeniería - Universidad de Sevilla

Máster en “Sistemas de Energía Eléctrica”
y Máster en “Ingeniería Industrial”

Doctorado Interuniversitario en “Sistemas de Energía Eléctrica”

WEBINARS

Dr. Panos Kotsampopoulos
National Technical University of Athens (NTUA)

1) 4/11/2020, 12:00-14:00, Real time simulation: key features, applications and interfacing issues.

2) 5/11/2020, 12:00-14:00, Voltage control in distribution networks, microgrids and islanded system.

3) 6/11/2020, 10:00-12:00, New trends in power system education: HIL simulation, remote/virtual labs, interactive notebooks and advanced educational methods.

<http://departamento.us.es/ielectrica/eventos/>

CYTED PROGRAMA IBEROAMERICANO DE CIENCIA Y TECNOLOGÍA PARA EL DESARROLLO

AICIA Asociación de Investigación y Cooperación Industrial de Andalucía
Centro de Excelencia Cervera, otorgado por el Ministerio de Ciencia e Innovación y del CDTI, bajo el expediente CER20191019.

Figure 2-21. Presentation during the Webinar hosted by the University of Seville

2.2.2. ENTSO-E and E.DSO first InnoGrid virtual session on key role of electricity networks in the energy transition

- **Date:** 18 June 2020
- **Location:** online
- **Type of activity:** Participation and organization of an Event
- **Organisers:** EDSO and ENTSO-E
- **Estimated participants:** 200
- **Website:** https://ec.europa.eu/social/vocational-skills-week/index_en

- **EDDIE participant:** EDDIE Consortium
- **Type of participation:** Audience, Participant
- **Relation to EDDIE:** The European Distribution System Operators' Association (E.DSO) and the European Network of Transmission System Operators for Electricity (ENTSO-E) organized this year's InnoGrid edition as two independent webinars. InnoGrid's objective has always been to highlight what is new on innovation and to feature some of the leading R&D projects in Europe. In the first webinar, on June 18th, thoughts and projects were presented to contribute in making the Green Deal a reality. Richard Vidlička, responsible for Innovation and International Grid Projects at CEZ Distribuce and Chair of E.DSO Projects Committee stressed once again the crucial role of EU funded projects for the grids of the future and the fundamental importance of electricity networks playing as the "platform" for an effective climate neutral economy by 2050. While mentioning the important role of the EDDIE project, among others, in bringing the goal of a green Europe one step closer. The EDDIE project will bridge the gaps of digital skills and the energy transition by analysing major technology, economy, and social challenges. The Virtual Session showed that power network operators are committed to support the energy transition overcoming the pandemic crisis. Innovative resilience means continuing to support the creation, on top of an adequate physical infrastructure, of a technologically advanced environment with smart, digitalized, and integrated solutions. Cristobal Irazoqui, Energy Policy Officer at DG Energy, stressed the fact that the Green Deal is a roadmap of actions which needs innovations and initiatives to reach the climate and energy targets in allotted time. Only innovation in hand of hand with digitalization can render the Green Deal a reality.
- **The official logo of the event:**



Figure 2-22. INNOGRIG - Virtual Sessions

2.2.3. European Vocational Skills Week

- **Date:** November 9-13, 2020
- **Location:** online
- **Type of activity:** Participation and organization of an Event
- **Organisers:** European Commission
- **Estimated participants:** 500
- **Website:** https://ec.europa.eu/social/vocational-skills-week/index_en
- **EDDIE participant:** EDDIE Consortium
- **Type of participation:** Audience, Participant
- **Relation to EDDIE:** European Vocational Skills Week is an annual event where local, regional or national organisations showcase the very best of vocational education and training (VET). VET is a path to a more fulfilling personal and professional life. European Vocational Skills Week is a platform to make VET's potential more widely known, and an opportunity to exchange information and good practice across Europe and beyond. The focus of the 2020 edition has been on higher VET (post-upper secondary school level) and VET skills for green and digital transitions. Promoting digital learning platforms, establishing a culture of lifelong and continuous education, and implementing sustainable VET structures are key issues. EDDIE has been involved in the European Vocational Skills Week 2020 between 09 – 13 November as an associated event for dissemination project's results, lesson learned and conclusions from the needs identified in the professional environment regarding the knowledge and skills on digitalization, VET providers, and the education system, with the involvement of policy makers. As part of the European Vocational Skills Week 2020, local, regional, and national organisations from the EU and beyond hosted virtual events and activities, emphasising the benefits of VET and its crucial role in lifelong learning. They provided young learners with the initial skills they need for a fulfilling career and creating the means for adults to build on existing skills (upskill) and develop new skills (reskill) throughout

their lives. Over 781 associated events and activities registered in 38 countries, reaching more than 1.6 million people.

A set of social media posts and activities has been done by EDDIE project using the EVSW hashtags especially dedicated to this kind of actions.

- **The official logo of the event** can be found in Figure 2-23



Figure 2-23. European Vocational Skills Week

2.2.4. PLATform for Operation of distribution NETworks (PLATONE) Project Midterm Conference – "GROWING THE ENERGY TRANSITION"

- **Date:** 14 – 15 September 2021
- **Location:** online
- **Type of activity:** Participation of an Event
- **Organizers:** PLATONE Project, E.DSO, RWTH
- **Estimated participants:** 180
- **Website:** <https://www.platone-h2020.eu/Events/1021/Growing-the-energy-transition--The-Platone-midterm-conference>
- **EDDIE participant:** CRE, E.DSO, RWTH, NTUA
- **Type of participation:** Audience
- **Relation to EDDIE:** CRE, EDSO and RWTH participated at the PLATform for Operation of distribution Networks (PLATONE) Project Midterm Conference "GROWING THE ENERGY TRANSITION", organized Online, on Tuesday, 14th of September 2021 and Wednesday, 15th of September 2021. The PLATform for Operation of distribution Networks Project is funded by the European Union (EU), through the Horizon 2020 Research and Innovation (R&I) Programme.

The event aimed to boost knowledge sharing, know-how and expertise by discussing key topics of the present global transformation of the Energy Sector. "Growing the Energy Transition" highlighted the Future of Flexibility and Digitalization, created an interesting dialogue that enabled an active discussion between the Participants, Speakers and the Project itself and allowed to participants to interact with the Italian PLATONE Demonstration.

Additionally, Day 2 Event underlined the "Strategies for Consumer and Citizen Engagement in the Energy Transition". Also, participants were able to interact with the German and Greek PLATONE demonstrations which gained insights into their unique local activities and set-ups. During the presentations of the trials, synergies with EDDIE were highlighted by the mutual partners participating in both projects (RWTH and NTUA). To manage the Energy Transition, Distribution System Operators (DSO) require innovative tools. Volatile Renewable Energy Sources in combination with less predictable consumption patterns call for higher levels of observability and exploitation of flexibility. While these two challenges are traditionally treated with separate means, PLATONE proposes an innovative approach to a joint data management for both. In this context, EDDIE Project gathered relevant information regarding the energy transition.

For this event, CRE Association shared **content** and information for its members.

- **Photos from the event:** Figure 2-24



Tue, 14.9.2021, 13:30 Uhr
Online conference
Organizer: Platone consortium

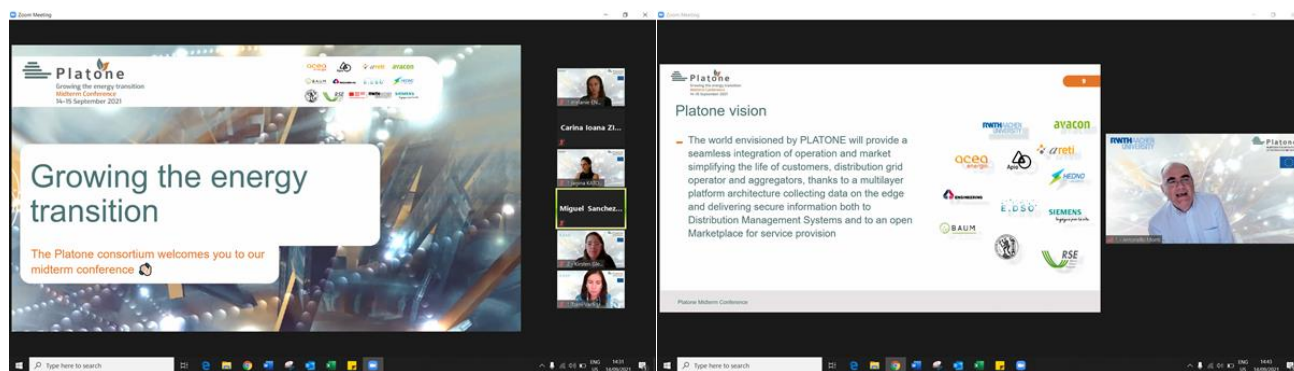


Figure 2-24. Growing the Energy Transition - Platone project synergies with EDDIE project

2.2.5. ICAE2021-13th International Conference on Applied Energy (Conference)- “Sustainable Energy Solutions for a Post-COVID Recovery towards a Better Future”

- **Date:** December 2nd, 2021
- **Location:** Bangkok, Thailand (Online)
- **Type of activity:** Participation to a Conference
- **Organizers:** ICAE (International Conference on Applied Energy)
- **Website:** <https://applied-energy.org/icae2021/wp-content/uploads/2021/12/Program-Book-V3.pdf>
- **Participant:** Comillas
- **Type of participation:** Panelist (Professor Fernando de Cuadra)
- **Presentation/Speech/ title:** The role of microgrids in electrification planning: an integrated distribution approach from the Universal Energy Access group.
- **Presentation abstract:** The role of microgrids in electrification planning will be presented from the perspective of the diverse activities of our research group (<https://universalaccess.mit.edu>). The software tools used by the group for large-scale electrification planning like REM, LREM and RNM will be presented, highlighting their relations with the microgrids design problem. The core of the presentation will be devoted to our current topics of research in microgrids, stressing challenges and motivations. Such topics include market models for energy management, under-the-grid microgrids, diverse customer types — with their cost/reliability trade-offs —, and hierarchical distribution based on spot prices. Finally, current activities and immediate challenges will be summarized, along with conclusions derived from the research.

- **Relation to EDDIE:** EDDIE was introduced in the self-presentation of the speaker, mentioned as Principal Investigator of EDDIE. It is also related because of the research topics introduced, all of them based in digital models for design, modelling and operation of microgrids.
- **Photo:** Figure 2-25

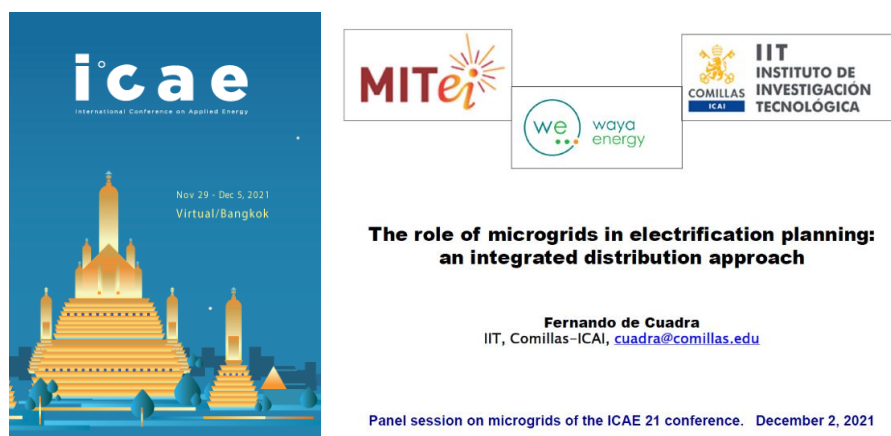


Figure 2-25. Icae event frontpage and presentation on microgrids and EDDIE role in education for digitalization of electrification planning.

2.2.6. Energy Education in the Future

- **Date:** December 6th, 2021
- **Location:** Doha, Qatar
- **Type of activity:** Event
- **Organizers:** Texas University at QATAR
- **Website:** <https://na.eventscloud.com/website/25091/home/>
- **Participant:** Universidad Pontificia Comillas (Miguel A. Sanchez-Fornie)
- **Type of participation:** Panelist
- **Presentation/Speech/ title:** Workshop: Energy Mentors-Building and Strengthening the Energy Talent Pipeline.
- **Presentation abstract:** This workshop aims to develop a robust career-spanning mentor program to diversify, expand, and enhance the energy talent pipeline. Such a mentoring program could start very early, such as high school, and offer 1) a professional mentor from their home country and 2) research experiences through a university. This workshop will convene a group of industry and academic energy professionals interested in developing and supporting such a pipeline mentoring program.
- **Relation to EDDIE:** Dissemination of EDDIE project and initial results.
- **Picture promoting the event:** Figure 2-26



Energy Education of the Future Forum

Doha, Qatar
December 5&6, 2021

Figure 2-26. Presentation during Energy Education in the Future event

2.3. Events attended due to their importance and relevance and content to be considered within EDDIE.

2.3.1. Innovations for operating power systems with increasing shares of variable renewables (Webinar)

- **Date:** February 11, 2021
- **Location:** online
- **Type of activity:** Participation to a Webinar
- **Organisers:** International Renewable Energy Agency (IRENA) – TRANSNET BW – ICE
- **Estimated participants:** 100
- **Website:** <https://irena.org/events/2021/Feb/Innovations-for-operating-power-systems-with-increasing-shares-of-variable-renewables>
- **EDDIE participant:** CRE
- **Type of participation:** Audience
- **Relation to EDDIE:** The joint webinar by the International Renewable Energy Agency (IRENA), TransnetBW GmbH, one of the TSOs in Germany and ICE, the Costa Rican Electricity Institute, aimed to discuss innovative solutions for operating power systems with increasing shares of variable renewable electricity. Combining innovations for renewable solutions has been proposed during the webinar by enabling technologies (internet of things, artificial intelligence and big data, blockchain), by addressing market design (regional markets, increasing time granularity in electricity markets, innovative ancillary services), by improving the system operation (advanced forecasting of variable renewable power generation, co-operation between transmission and distribution system operators, co-operation between transmission system operators). The innovative approach on the role of renewables helps the consortium in identifying the needs of this specific area of the energy sector in terms of education and digitalization.
- **Photo:** Figure 2-27



Figure 2-27. Innovations for operating power systems with increasing shares of variable renewables

2.3.2. Pact for Skills – support for upskilling and reskilling under Erasmus+. Seminar Pact for Skills. Blueprint Sector Skills Alliances 2017-2020.

- **Date:** February 17-18, 2021
- **Location:** online
- **Type of activity:** Participation to a Webinar
- **Organisers:** EC
- **Estimated participants:** 360
- **Website:** <https://ec.europa.eu/social/main.jsp?catId=1517&langId=en>
- **EDDIE participant:** CRE, COMILLAS, NTUA, E.DSO, DNV
- **Type of participation:** Audience
- **Relation to EDDIE:** The aim to participate in the webinar is to get a better knowledge about the Pact for Skills [2] as one of the main actions under the European Skills Agenda to get involved in this action and to integrate into EDDIE. The European Commission launched the Pact for Skills, as a leading action for the European Skills Agenda, where national, regional, and local authorities, social partners, cross-industry and sectoral organizations, education and training providers and employment services have a key role to play. The aim and objectives of The Pact are for concrete actions and join forces to upskill and reskill people in Europe in the context of supporting the goals of the Green Deal and Digital Transitions of the EU Industrial and SMEs strategies. The dimension and importance of this Pact at EU level is highlighted by being the leading action under the European Skills Agenda as firmly anchored in the European Pillar of Social Rights. The Pact promotes a culture of lifelong learning for all, building strong skills partnerships, monitoring skills demand, and anticipating skills needs but it also stands for working against discrimination and for gender equality and equal opportunities. The pact aims to mobilize and incentivize private and public stakeholders to actively contribute to the upskilling and reskilling of individuals and when appropriate and feasible using pool efforts in partnerships. Pathway to achieve sustainability in energy transition including societal decisions such as European Green Deal, digital economy of today and supporting industrial and SMEs strategies led to firmly believe that skills are key for both people and companies to unlock competitiveness, social fairness, and resilience. The European Skill Agenda underline the role of companies and social partners in cooperation and exchange at local and regional level but also the importance of social dialogue for a successful upskilling and reskilling in Europe. The Pact was created based on other EU initiatives for cooperation including the reinforced European Alliance for Apprenticeships but also on the Blueprint for Sectoral Cooperation of Skills.
- **Photo:** Figure 2-28.

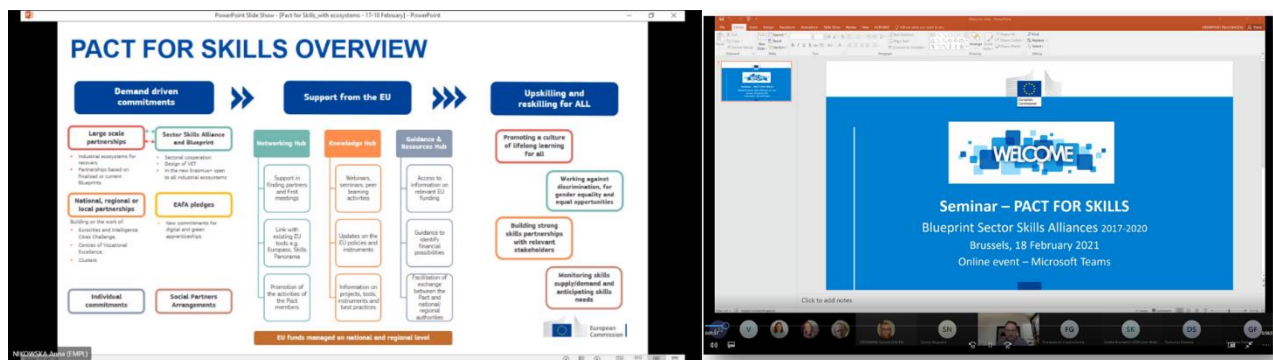


Figure 2-28. Skill Building for the Energy Transition - Presentation during the webinar

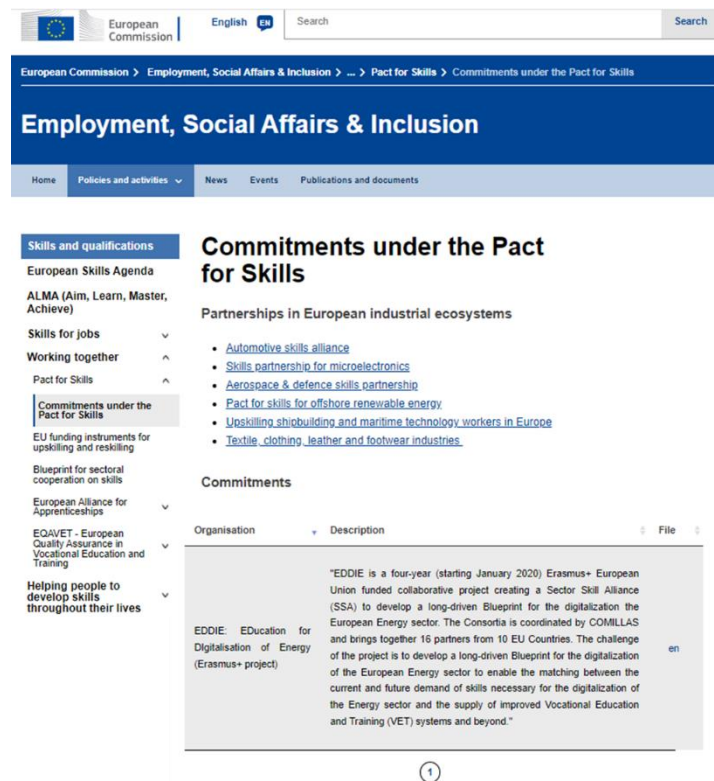


Figure 2-29. EDDIE project - commitment for Pact for Skills

To promote and disseminate this event and to provide more information on the EU “Pact for Skills” initiative, EDDIE consortium created a dedicated document as a press release that was posted on the website and shared on the social media channels. The document is listed under the **NEWS** section on the website and can be found [here](#) as well. A print screen of this document is in Figure 2-30.



Figure 2-30. EDDIE's Press release for Pact for Skills

For this event, our partner CRE disseminated among its members a press release with more information via email and posted on their website and social media. A print-screen of this press release can be seen in Figure 2-31 and the document can be found in the **Press Release** section on CRE website but also [here](#).

EUROPEAN COMMISSION PACT FOR SKILLS IN THE CONTEXT OF ROMANIAN ENERGY CENTER
ASSOCIATION AND EDDIE PROJECT16th of February 2021, Radu PLĂMĂNESCU

The European Commission launched the Pact for Skills, as a leading action for the European Skills Agenda, where national, regional, and local authorities, social partners, cross-industry and sectoral organizations, education and training providers and, employment services have a key role to play. The aim and objectives of The Pact are for concrete actions and join forces to upskill and reskill people in Europe in the context of supporting the goals of the *Green Deal* and *Digital* Transitions of the *EU Industrial and SMEs* strategies. The dimension and importance of this Pact at EU level is highlighted by being the leading action under the *European Skills Agenda* as firmly anchored in the European Pillar of Social Rights. The newly funded Erasmus+ project of Romanian Energy Center innovation portfolio called EDDIE - (*EDucation for Digitalisation of Energy*) has the main objective to develop a long-driven Blueprint for the digitalization of the European Energy sector to enable the matching between the current and future demand of skills necessary for the digitalization of the Energy sector. Within this context CRE as part of EDDIE consortium will translate their engagement into concrete commitments on upskilling and reskilling by bringing to reality the key principles of the Pact.

Figure 2-31. CRE's press release on Pact for Skills

2.3.3. "Skill Building for the Energy Transition"

- **Date:** February 23, 2021
- **Location:** online
- **Type of activity:** Participation to a Webinar
- **Organisers:** IRENA
- **Estimated participants:** 80
- **Website:** https://www.irena.org/-/media/Files/IRENA/Agency/Events/2020/Jun/IRENA-Insights/Skill-Building/IRENAinsights_Skills_final.pdf?la=en&hash=F34A1F96D2E9677972E7771BB174EF8F662C3DBF
- **EDDIE participant:** CRE
- **Type of participation:** Audience
- **Relation to EDDIE:** The solution proposed by the reports presented, focus on preparing students to work in many occupational areas, beside redesigning the curriculum by targeting schools, higher education, vocational training, professional or supplementary education and training.
High attention has been directed towards the curriculum design at all the education levels. In the case of schools, the focus was on the need of the early exposure, on the requirement of the citizens to own knowledge and on the potential to integrate renewable energy into national curriculum frameworks. For higher education has been underlined the need for the curriculum to be updated to reflect competences and skills. The vocational training must reflect the industry need, to be delivered by TVET colleges and industry, and courses must cover the technical skills. In the case of professional or supplementary education and training, the webinar covered the continuing education and training, the need for upskilling and the specialized knowledge.
As participant, EDDIE could not agree more with the conclusion that building the skill base necessary for achieving the energy transition requires the implementation of education and training policies and programs that address the need to reskill and upskill the existing energy workforce as well as educate a new generation of energy professionals." The webinar concluded that curriculums would need to address cross-disciplinary skills, emerging skills (storage, digitalisation, bioenergy, etc.) and innovation and entrepreneurship abilities.
- **Photo:** Figure 2-32

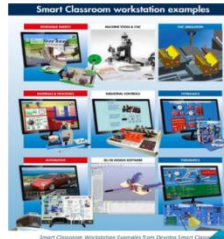
Technology Enhanced Learning

ICT innovations can play an important role in the delivery of renewable energy education and training

Applies both to tech savvy Gen Z...

...as well as mature learners seeking to reskill

The pandemic has shown us the importance of digital learning for all and has changed the future of education



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Skill Building for the Energy Transition

TUESDAY, 23 FEBRUARY 2021 • 12:00-12:30 CET

IRENA

Figure 2-32 – "Skill Building for the Energy Transition"

2.3.4. "Remote Testing & EIRIE Platform"

- **Date:** March 8, 2021
- **Location:** online
- **Type of activity:** Participation to a Webinar
- **Organisers:** European Distributed Energy Resources Laboratories (DERLAB), ERIGRID 2.0 and PANTERA projects
- **Estimated participants:** 120
- **Website:** <https://der-lab.net/remote-testing-eirie-platform-webinar-on-demand/>
- **EDDIE participant:** Romanian Energy Center (CRE)
- **Type of participation:** Audience
- **Relation to EDDIE:** Pantera project has been working on developing an interactive multi-platform called EIRIE Platform (European Research Infrastructure supporting Smart Grid and Smart Energy Systems Research, Technology Development, Validation and Roll Out) that will build trustful cooperation with stakeholders, acting as the meeting point of all actors active in the field of energy Research and Innovation from all Europe.

The experience with the Remote Lab Access Services on the Example VILLAS4ERIGRID, the Virtual Research Services in ERIGRID 2.0 were introduced. Lab Services from RWTH Aachen and the OpenAFPM Services from ICCS-NTUA presented their demo, concluding with the EIRIE Platform description and functionalities.

The presentation of the ERIGRID 2.0, Research Infrastructure for Smart Grids and Smart Energy Systems highlighted the project motivation – planning and operation of the energy infrastructure (large-scale integration of Renewable Sources, controllable loads like battery storage, electric vehicles). Its trends and future directions like the digitalization of energy infrastructure, a deeper involvement of consumers and market interaction, sector coupling for higher flexibility and resilience were part of the discussion as well. Regarding the Integrated Smart Energy Research Infrastructure, the ERIGRID Project stands for Research and Technology Development in Smart Grids and Smart Energy Systems, for the Digitalisation with Lab Interfacing and Data Exchange for physical and virtual access, and it develops simulation, co-simulation, ICT and Automation and Controls for Power and Energy Systems. The ERIGRID 2.0 Project provides engineers in power system testing, smart grids and energy systems free funding to access the best laboratories of Europe and perform their experimental research. Access to physical labs can be on-site or remote, depending on the conditions of specific laboratories.

Regarding the education and training, during the event has been presented the importance and the possibility to offer education and training for energy professionals; physical and remote workshops, webinars, tutorials, and training schools; open access laboratory education; provision of e-learning tools and open access resources.

Synergy with EDDIE Project are encouraged by the EIRIE Platform with the objective to enhancing future skills of professionals, technicians, trainees (all education levels) needed in the Smart Grid area. Moreover, the EIRIE Platform may support the sustainability of the Eddie within the SSA Blue Print of EDDIE project

For this event, CRE Association shared **content** and information for its members. A print screen of this document is in Figure 2-33.

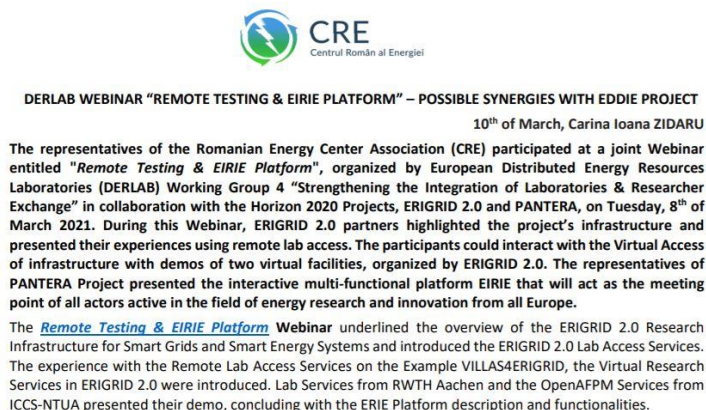


Figure 2-33. CRE's press release on "Remote Testing & EIRIE Platform" webinar

- **Photos from the event:** Figure 2-34

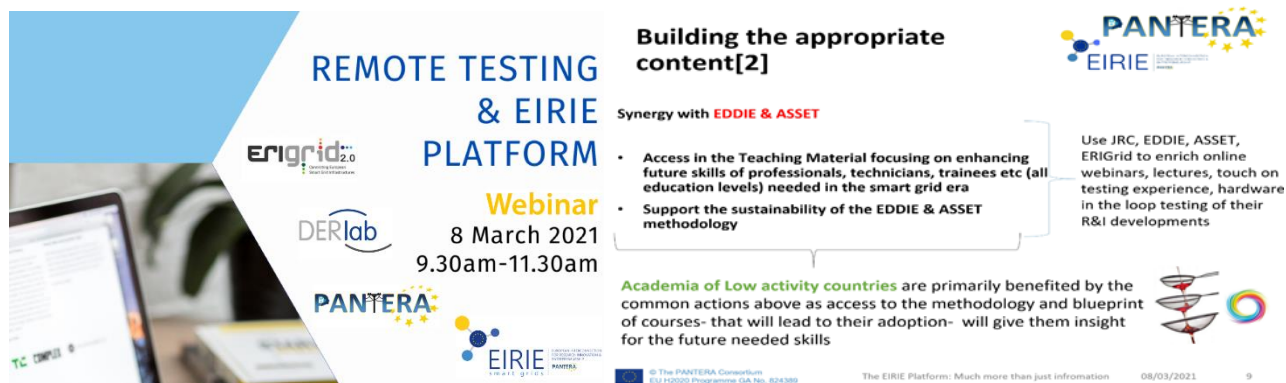


Figure 2-34. "Remote Testing & EIRIE Platform" Webinar

2.3.5. Launch of the New Manifesto for Enhancing Digital Competences across Europe

- **Date:** May 6, 2021
- **Location:** online
- **Type of activity:** Participation to an Event
- **Organisers:** ALL DIGITAL
- **Estimated participants:** 150
- **Website:** <https://all-digital.org/events/launch-of-the-new-manifesto/>
- **EDDIE participant:** CRE
- **Type of participation:** Audience
- **Relation to EDDIE:** ALL DIGITAL represents more than 25.000 digital competence centres across European Union. The manifesto sought to contribute to dialogue, implementation, and cooperation on the EU actions to deliver Europe's digital future. Through the building blocks of the manifesto, can be enumerated: the education and training offer, access to education and training, quality of education and training, a European approach to digital competences, sustainability and development. Each of these categories was presented in detail during the event. The education and training offer must be designed to reflect the needs of people, the labour market, and the society, while understanding the developing in

combination with other key competences. It must be in line with the digital transformation and recognised as part of the lifelong learning pathways. In the case of access to education and training, there should be sufficient provision of education and training in the market to meet demand.

The mission was to empower the member organizations representing non-formal education providers to support millions of Europeans to succeed in the digital transformation by providing them with training and advice.

- **Photo relevant for the event:** Figure 2-35



Figure 2-35 - Launch of the New Manifesto for Enhancing Digital Competences across Europe

2.3.6. EURASHE 30th Annual Conference - Professional Higher Education and sustainable development: creating a change that endures

- **Date:** May 20-21, 2021
- **Location:** online
- **Type of activity:** Participation to a Conference
- **Organisers:** European Association of Institutions in Higher Education (EURASHE), Portuguese Polytechnics Coordinating Council (CCISP), the Polytechnic of Porto and Portuguese Presidency of the Council of the EU.
- **Estimated participants:** 300
- **Website:** <https://www.eurashe.eu/events/annual-conferences/30th-annual-conference-online-20-21-may-2021/>
- **EDDIE participant:** Romanian Energy Center (CRE)
- **Type of participation:** Audience
- **Relation to EDDIE:** The main aim of the conference was to build up a set of Specific Recommendations and discuss a potential Action Plan for their implementation by professional higher education and its stakeholders over the next years. In this regard, EDDIE project has been part of the audience as an important pillar of education in energy sector. Panel discussion on „European Universities initiatives” and „Professional higher education for smart and sustainable recovery”, were part of the programme.

The concept of sustainable development, which is fundamental for the European Union, is based on a large holistic approach to a whole range of interlinked global challenges. The 17 Sustainable Development Goals (SDGs) plot out a route on how to overcome the challenges we face, and to improve our habitat, our economy and our lives. They shape all EU internal and external policies and steer the implementation of the seven-year EU budget. It is amply acknowledged that the achievement of the SDGs will not be possible without education, and not the latest Professional Higher education (hereafter –PHE), significant involvement in the cause. Thus, five years after the setting out of Agenda 2030, it is important to analyse the experience accumulated and to draw the way forward.

EURASHE Annual Conferences attracts each year a diversity of delegates – heads of institutions, higher education practitioners, business representatives, policy-makers, academics and students – from the education community across Europe and beyond its borders. It is recognised as a communication platform

for education experts and professionals, and is characterised by its practical, innovating and stimulating approach.

Universities of applied sciences' leaders, the entire community of professional higher education, European businesses and public institutions and European students' representatives has been invited to attend the EURASHE event to share their experience and to learn about trends, models and inspiring practices.

- **Photo:** Figure 2-36



Figure 2-36 - Professional Higher Education and sustainable development: creating a change that endures

2.3.7. Power Summit 2021 – Electric Decade

- **Date:** May 25-28, 2021
- **Location:** online
- **Type of activity:** Participation to a Event
- **Organisers:** EURELECTRIC
- **Estimated participants:** 3000
- **Website:** <https://powersummit2021.eurelectric.org/>
- **EDDIE participant:** CRE, COMILLAS, EDSO
- **Type of participation:** Audience
- **Relation to EDDIE:** The Event highlighted important topics such as: Energy Transition, Renewable Heating Solutions, Hydrogen, Digital & Data, Innovation, Digital Jobs and Digitalisation. Europe's premier power sector event recognised as the "Electric Davos" is the leading forum where the European power sector ecosystem connects industry captains, politicians, business disrupters, investors and academics.
Eddie project considers the evolution of the power systems an important source of identifying or predicting the future needs in terms of skills, abilities, and competences of the energy sector.
- **Photos from the event:** Figure 2-37



Figure 2-37 – Power Summit 2021 - Electric Decade

2.3.8. 4th E.DSO-ENCS-ENTSO-E Webinar on Cybersecurity “Enhancing our grid resilience”

- **Date:** 21 October 2021
 - **Location:** online
 - **Type of activity:** Participation as audience
 - **Organizers:** Association of European Distribution System Operators (E.DSO), European Network for Cyber Security (ENCS), European Network of Transmission System Operators for Electricity (ENTSO-E)
 - **Estimated participants:** 150
 - **Website:** <https://www.edsoforsmartgrids.eu/save-the-date-4th-e-dso-encs-entso-e-event-on-cybersecurity-enhancing-our-grid-resilience/>
 - **EDDIE participant:** Romanian Energy Center (CRE), E.DSO
 - **Type of participation:** Audience
 - **Relation to EDDIE:** This webinar focused on “enhancing our grid resilience”, the conference brought together experts in the field of Cybersecurity to exchange on the latest industry knowledge and to present learnings from past threats with a solution-based approach. Since Eddie project is looking into the security of supply chain in times when cyber warfare hits the energy grids, network codes related to cybersecurity, as well as into abilities and competences in the cybersecurity fields, the webinar presented key information in the consortium research.
- The European Network for Cyber Security (ENCS), the Association of European Distribution System Operators (E.DSO), and the European Network of Transmission System Operators for Electricity (ENTSO-E), together hosted a virtual event on 21st of October, discussing the challenges of increasing volume and sophistication of malicious acts towards the European energy grid and how the Network Code Cybersecurity will enhance our grid resilience.
- **Photo of the event:** Figure 2-38



Figure 2-38. 4th E.DSO-ENCS-ENTSO-E Webinar on Cybersecurity “Enhancing our grid resilience”

2.3.9. 10th INNOGRID EDITION - "Living the Transition"

- **Date:** Friday 4th and 11th of June 2021
- **Location:** online
- **Type of activity:** Participation to an Event

- **Organizers:** Association of the European Distribution System Operators (E.DSO) and the European Network of Transmission System Operators for Electricity (ENTSO-E)
- **Estimated participants:** 150
- **Website:** <https://www.innogrid.eu/>
- **EDDIE participant:** CRE, E.DSO
- **Type of participation:** Audience
- **Relation to EDDIE:** EDDIE representatives participated at the 10th InnoGrid Edition focused on "Living the Transition", jointly organized Online by the Association of the European Distribution System Operators (E.DSO) and the European Network of Transmission System Operators for Electricity (ENTSO-E), on Friday 4th and 11th of June 2021. The Event brought together experts from Transmission and Distribution System Operators (TSOs and DSOs), European Union (EU) Officials, Academics, Representatives of Civil Society and Industry.

InnoGrid Conference on 4th of June highlighted the important role of networks in the energy transition and how they are enabling it today. During the Event, on 11th of June, the audience had the opportunity to learn more about leading EU funded Research and Development (R&D) projects that contribute to the transition by developing innovative solutions to digitalization, renewables integration, flexibility, and new market opportunities.

Opening the 10th edition of InnoGrid, on 4th of June, European Energy Commissioner, Ms. Kadri SIMSON stressed the three major trends affecting Europe's energy system: decarbonization, decentralization, and digitalization. Ms. Kadri SIMSON pointed out the important role of transmission and distribution system operators in managing the impact of these trends on the power system. The InnoGrid first day showed that TSO & DSO cooperation is very strong, regarding innovation, flexibility or sector integration, and that it will remain a key enabler in the years to come for reaching the objectives under the EU Green Deal. [1]

Innogrid Day 2 - "Beyond Sandboxes" focused on Innovation in Asset Management and Markets. Introduced by Mr. Uros SALOBIR - Vice-Chair of ENTSO-E Research, Development and Innovation Committee, and Mr. Richard VIDLIČKA - Chair of E.DSO Innovation & Research Committee, the second day of the 10th edition of InnoGrid gave the opportunity to participants to deep dive in some of the Horizon2020 Projects in the areas of asset management and markets.

With a long history on European innovation, InnoGrid 2021 event has been a source of information and inspiration, through the most pressing topic of the moment – energy transition. Having the opportunity to learn more about how other EU funded R&D projects work on innovative solutions related to digitalisation (and not only), helped the EDDIE team to refine its view on how to tackle the subject of education for digitalization of energy sector.

For the "10th INNOGRID EDITION – "Living the Transition" Event, CRE Association shared [content](#) and information for its members. A print-screen of this press release can be found in Figure 2-39.

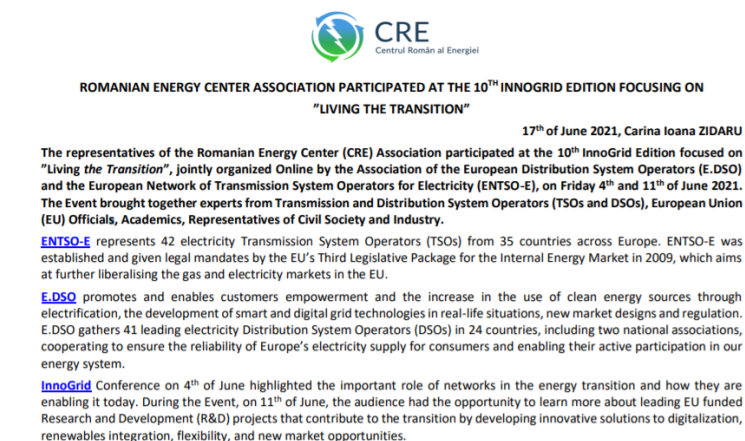


Figure 2-39. CRE's press release on the "10th INNOGRID EDITION – "Living the Transition" Event, CRE As

- **Photos from the event:** Figure 2-40.



Figure 2-40. 10th INNOGRID EDITION - "Living the Transition" - photos from the event

2.3.10. Workshop on Analyzing and Comparing VET Qualifications

- **Date:** June 18, 2021
- **Location:** online
- **Type of activity:** Participation to a Workshop
- **Organizers:** European Centre for the Development of Vocational Training (CEDEFOP)
- **Estimated participants:** 300
- **Website:** <https://www.cedefop.europa.eu/en/events/workshop-analysing-and-comparing-vet-qualifications>
- **EDDIE participant:** CRE
- **Type of participation:** Audience
- **Relation to EDDIE:** EDDIE Project participated at the Workshop on Analyzing and Comparing Vocational Education and Training (VET) Qualifications, organized by the European Centre for the Development of Vocational Training (CEDEFOP), on 18th of June 2021. The Workshop presented the final findings of the CEDEFOP Project - Comparing vocational education and training qualifications: towards a European Comparative methodology. This Event allowed for a discussion on how to strengthen the feed-back-loop between education and training and the labor market; and thus, provide a better link between the supply and demand of skills and qualifications. Moreover, the Workshop presented a series of use-cases where a systematic analysis and comparison of learning outcomes can support researchers, policy makers and practitioners involved in the development as well as review and renewal of skills and qualifications. The workshop gathered selected international experts and researchers working on comparative methodologies from different angles.
- **Photo:** Figure 2-41



Figure 2-41. Workshop on Analyzing and Comparing VET Qualifications

2.3.11. SEFI Annual Conference 2021

- **Date:** September 13-16, 2021
- **Location:** Online
- **Type of activity:** Participation of a Conference
- **Organizers:** SEFI & Technische Universität Berlin (TUB)
- **Estimated participants:** 100
- **Website:** <https://sefi2021.eu/>
- **EDDIE participant:** CRE
- **Type of participation:** Audience
- **Relation to EDDIE:** The year 2020 has challenged universities worldwide in an unprecedented way. On short notice, universities had to switch from on-site classroom teaching to online teaching formats. We all realize that this extensive online teaching will have a sustainable impact on the way we teach and learn. The conference will focus on the implications of this very special experience on Engineering Education in Europe and worldwide.
Most universities will use this opportunity for extensive evaluations and supporting research to assess the pros and cons of this transition. During the discussions, topics such as the adapting teachers and learners to a new situation, which formats and methods have proven so successful that teachers would like to integrate them into their courses in the long term were addressed.
- **Photo as logo and presentation:** Figure 2-42.



Figure 2-42. SEFI annual conference

2.3.12. “The Truth about Sector Coupling”

- **Date:** September 20, 2021
- **Location:** online
- **Type of activity:** Organization of an Event
- **Organizers:** E.DSO, Gas Distributors for Sustainability (GD4S)
- **Estimated participants:** 130
- **Website:** <https://www.edsofordsmartgrids.eu/the-truth-about-sector-coupling/>
- **EDDIE participant:** CRE, E.DSO.
- **Type of participation:** Audience
- **Relation to EDDIE:** The representatives of the Romanian Energy Center (CRE) Association participated at “THE TRUTH ABOUT SECTOR COUPLING” Online Conference, jointly organized by the Association for European Distribution System Operators (E.DSO) and the Gas Distributors for Sustainability (GD4S), on Monday, 20th of September 2021.

This webinar aimed to encourage and extend the debate on sector coupling and its challenges by exploring new and innovative ideas and technologies which could facilitate the coupling of the electricity and gas sectors. One main idea from the presentations of the workshop mention digitalisation as a mandatory

enabler to a smarter system, in the context of a European Union framework that ease and incentivize interaction between the electricity, gas, buildings, transport, and industry through relevant technologies.

"[THE TRUTH ABOUT SECTOR COUPLING](#)" Webinar gather experts from the private and public sector shared their knowledge about Sector Coupling and their vision on how to reach a fully decarbonised Energy System thanks to Gas and Electricity. The main topics of the Conference were the Electricity and Gas in Transport Sector, Sector Integration in Heating and Sector Integration at Local Level. To reach the ambitious targets, all the involved actors agreed on the fact that, in order to make the sector coupling something real and effective at the lower cost, for States, companies and consumers, European Energy Players will need to work very closely and think about comprehensive view with the goal to achieve the objectives set by the European Commission.

- **Photo relevant for the event:** Figure 2-43



Figure 2-43. "The Truth about Sector Coupling" - opening of the event

2.3.13. Conference - Flexibility: The enabler for a clean energy future?

- **Date:** November 10, 2021
- **Location:** Digital event
- **Type of activity:** Participation to a Conference
- **Organisers:** Euroelectric
- **Estimated participants:** 80
- **Website:** <https://www.euroelectric.org/events/flexibility-the-enabler-for-a-clean-energy-future-10-nov-2021/>
- **Participant:** Iberdrola
- **Type of participation:** Audience
- **Presentation/Speech/ title:** Flexibility: The enabler for a clean energy future?
- **Presentation abstract:** The need of design or adapt the services that provides the DSOs and TSOs to the clients, this service should be flexible to guarantee Europe's position as a leader in the global green economy because there is an increasing of the demand about decentralized power. Innovations solutions, efficient and transparent market are required to accomplish the target as well laying the foundations for the creation of a legal framework. Overarching principles for the market-based procurement: transparency, data visibility, coordination, value stacking, incentives, and technology neutral approach.
- **Relation to EDDIE:** The topic of the conference (flexibility as a necessary pathway for the future of green energy) generates a global vision of how the electricity sector will evolve in the coming years, thus being able to deduce what skills and knowledge companies will demand from their employees to create an education system accordingly.
- **Photo related to the event:** Figure 2-44

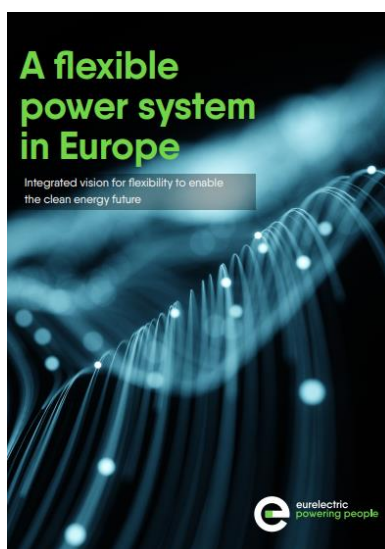


Figure 2-44. Cover of Euroelectric's report

2.3.14. 3rd Coordinet Stakeholder Forum – Roadmap for a Green Deal fir market design

- **Date:** November 25, 2021
- **Location:** hybrid event
- **Type of activity:** Participation of a Forum
- **Organizers:** Coordinet Project
- **Estimated participants:** 100
- **Website:** <https://coordinet-project.eu/news/3rd-coordinet-stakeholder-forum>
- **EDDIE participant:** CRE, EDSO.
- **Type of participation:** Audience
- **Relation to EDDIE:** Coordinet aims to help enable decarbonization in the EU by increasing the share of RES in the electricity system through active network management. Based on experiences from the DEMO runs, the following topics will be discussed: market timing, consumer engagement, aggregation, standardized products and services.

The third Coordinet Stakeholder Forum (SHF) aims to discuss recommendations for regulatory arrangements to the current energy market design, enabling TSOs and DSOs to procure considered standardized products for grid services in a coordinated manner across Europe.

Coordinet aims to help enable decarbonization in the EU by increasing the share of Renewable Energy Sources (RES) in the electricity system through active network management.

- **Photo for presentation the event:** Figure 2-45



Figure 2-45. 3rd Coordinet Stakeholder Forum – Roadmap for a Green Deal fir market design

2.4. Scientific work and publications

2.4.1. Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets – Energies Journal (MDPI)

- **Date:** 2021
- **Type of activity:** Publication
- **Organizers:** NTUA / KTH
- **Website:** <https://www.mdpi.com/1996-1073/14/7/1862>
- **Type of Activity:** Scientific Article
- **Publication title:** Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets
- **Publication authors:** Alexandros Chronis, Foivos Palaogiannis, Iasonas Kouveliotis-Lysikatos, Panagiotis Kotsampopoulos, Nikos Hatzargyriou
- **Publication abstract:** In this paper, we investigate the economic benefits of an energy community investing in small-scale photovoltaics (PVs) when local energy trading is operated amongst the community members. The motivation stems from the open research question on whether a community-operated local energy market can enhance the investment feasibility of behind-the-meter small-scale PVs installed by energy community members. Firstly, a review of the models, mechanisms and concepts required for framing the relevant concepts is conducted, while a clarification of nuances at important terms is attempted. Next, a tool for the investigation of the economic benefits of operating a local energy market in the context of an energy community is developed. We design the local energy market using state-of-the-art formulations, modified according to the requirements of the case study. The model is applied to an energy community that is currently under formation in a Greek municipality. From the various simulations that were conducted, a series of generalizable conclusions are extracted.
- **DOI:** <https://doi.org/10.3390/en14071862>
- **Relation to EDDIE:** The publication investigates the economic benefits of an energy community investing in small-scale photovoltaics and applying energy trading amongst the members, under the establishment of a local energy market which is strongly connected with the digitalisation of energy.
- **Photo, print-screen of the header:** Figure 2-46



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² Collective Energy Cooperative, Energy Community, 11631 Athens, Greece; foivos.palaogiannis@gmail.com

³ School of Electrical Engineering and Computer Science, KTH—Royal Institute of Technology, SE-100 44 Stockholm, Sweden; iasonas@kth.se

* Correspondence: achronis@power.ece.ntua.gr

Figure 2-46. Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets

2.4.2. THE ROLE OF MOOCS IN THE NEW EDUCATIONAL SCENARIO: AN INTEGRATED STRATEGY FOR FACULTY DEVELOPMENT

- **Date:** 2021
- **Type of activity:** Poster/Publication
- **Organizers:** POLIMI
- **Website:** <https://www.pok.polimi.it/>
- **Type:** Scientific Article, Poster
- **Publication title:** THE ROLE OF MOOCS IN THE NEW EDUCATIONAL SCENARIO: AN INTEGRATED STRATEGY FOR FACULTY DEVELOPMENT
- **Publication authors:** Daniela Casiraghi, Susanna Sancassani, Federica Brambilla (POLIMI)
- **Publication abstract:** The COVID-19 pandemic emergency has forced a profound reshape of our lives. Our way of working and studying has been disrupted with the result of an acceleration of the shift to the digital world. To properly adapt to this change, we need to outline and implement new urgent strategies and approaches which put learning at the center, supporting workers and students to further develop “future proof” skills. In the last period, universities and educational institutions have demonstrated that they can play an important role in this context, also leveraging on the potential of Massive Open Online Courses (MOOCs) which proved to be an important vehicle of flexibility and adaptation in a general context characterized by several constraints. From March 2020 till now, we have witnessed an exponential growth of MOOCs enrolments numbers, with “traditional” students interested in different topics not necessarily integrated to their curricular studies. To support students and faculty development during the spreading of the pandemic, Politecnico di Milano focused on one main dimension: faculty development for a better integration of digital tools and contents in the e-learning experience. The current discussion focuses on how to improve the integration of MOOCs in the in-presence activities to create meaningful learning and teaching experiences, thereby leveraging blended learning approaches to engage both students and external stakeholders to equip them with future job relevance skills.
- **Relation to EDDIE:** Within EDDIE strategy, MOOCs are a very important part in exploitation and the results. This publication proposed a way to support teachers in integrating MOOCs in the learning experience, and Politecnico di Milano has launched a series of online training paths for faculty development, offering a series of stimuli and tools useful to redesign learning and teaching experiences by enhancing the coherence between learning objectives, assessment methods and active learning experiences. These actions are very relevant in the context of EDDIE for best practices and examples to follow.
- **Photo, print-screen of the header:** Figure 2-46.

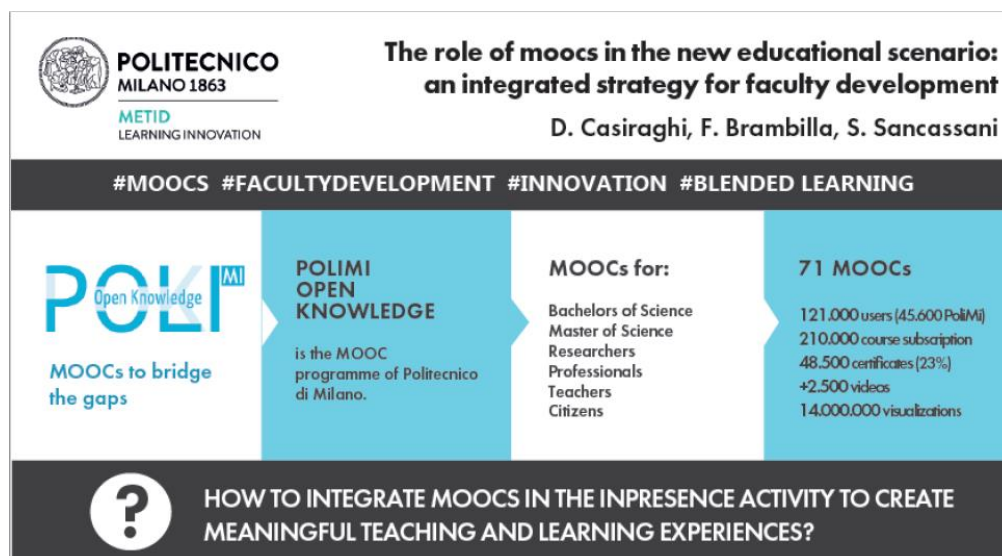


Figure 2-47. The role of MOOCs in the new educational scenario. A poster presented on POLIMI Platform

2.4.3. Supporting Regulatory Measures in the Context of Big Data Applications for Smart Grids

- **Date:** 2021
- **Type of activity:** Publication
- **Organizers:** Frontiers in Big Data
- **Website:**
https://www.frontiersin.org/articles/10.3389/fdata.2021.675461/full?&utm_source=Email_to_authors_&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Big_Data&id=675461
- **Type:** Scientific Article
- **Publication title:** Supporting Regulatory Measures in the Context of Big Data Applications for Smart Grids
- **Publication authors:** Mihai MLADIN (CRE)
- **Publication abstract:** Just mentioning big data in any context, we refer practically to a huge source of information whose processing can ensure the development of algorithms and the substantiation of decisions with minimal or almost no margin of error. The large volume that practically ensures the critical mass of information represents the power of big data, but the effective exploitation of this valuable source depends, to a large extent, on the quality of the data analysis, interpretation algorithms, and the associated ICT applications. In more and more fields, big data and in general digitalization is following a trend with a very high dynamic. In business, digitalization most often refers to enabling, improving, and/or transforming business operations and/or business functions by leveraging digital technologies and a broader use of digitized data, turned into intelligence and actionable knowledge. The energy sector is increasingly associated with the terminology "energy transition," and the main factors that determine and enhance this transition are the integration of renewable energy sources and digitalization. By default, and with technology advancement, the market reacts and proposes solutions to respond to these trends, but their adoption and implementation depends, to a large extent, on the regulatory framework.
- **Relation to EDDIE:** The energy sector is certainly the one in which historical data on the operation of energy systems have been collected to a large extent over time. Moreover, the trend and dynamics of digitalization consolidate this positioning of the energy sector toward big data and the exploitation of this huge potential. EDDIE project seeks for new trends such as digitalization in supporting smart grid processes by adopting and implementing data-driven solutions also generates new actor profiles such as solution integrators, aggregators, and others who play key roles in this context of energy transition.
- **Photo, print-screen of the header:** Figure 2-48

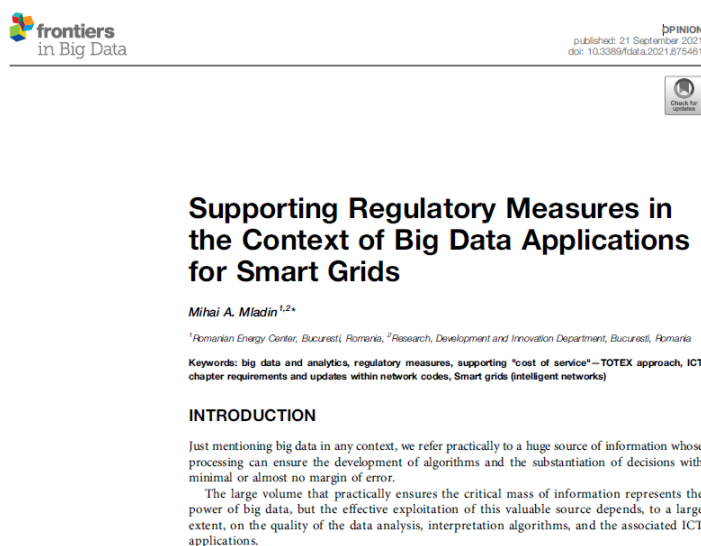


Figure 2-48. Supporting Regulatory Measures in the Context of Big Data Applications for Smart Grids – open access article in Frontiers.

2.5. EDDIE Advisory Board Meetings

The International Advisory Board (IAB) plays a key role as an independent external quality consultant for the project strategy, actions, and assessments, and also providing requirements and inputs on goals and issues, monitoring project milestones and providing final feedback on results and future expectations in other sectors and other blueprints.



Figure 2-49. IAB members of EDDIE

The members of IAB could be identified in Figure 2-49 and the complete list is as follows:

- **CESI** (The European Confederation of Independent Trade Unions), Belgium.
- **City of Aachen**, Germany.
- **City of Herne**, Germany.
- **DAFNI** (Network of Sustainable Greek Islands), Greece.
- **DERLab** (European Distributed Energy Resources Laboratories), Germany.
- **EUROGAS**, Belgium.
- **ENTSO-E** (European Network of Transmission System Operators for Electricity), Belgium.
- **FSR** (Florence School of Regulation), Italy.
- **Italgas** – GD4S member
- **NTT Data** (even if became a member of the EDDIE Consortium replacing GE ii 2020, remained within IAB, as started since the beginning of the project in 2019) .
- **T&D Europe**, Belgium.

2.5.1. 1st EDDIE Advisory Board Meeting – November 2020

The first meeting with IAB experts was carried out in November 2020 and an EDDIE project executive summary was presented, together with main achievements and planned activities summary. The coordinator of EDDIE presented the general ideas and characteristics of the project, objectives, expected results and deliverables (short a medium term), as well as the framework for the participation of the International Advisory Board. Following the introduction, a summary of the results obtained so far as well as the plans for the future work were presented by the project partners. The board members participated actively in the session, interacting with the speakers by asking questions and making comments about the presentation. During this meeting several topics were raised, and we can include here:

- The European Commission “Pact for Skills”, which includes green and digital skills
<https://ec.europa.eu/social/main.jsp?catId=1517&langId=en/>
https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2059
<https://europe-on.org/skills-4-climate/>
- “Open-Source Communities” within EDDIE project as they could be integrated in the project future work.
- Cybersecurity as the power system is developing so fast in terms of needs of security

- Skill gaps and how they can be tackled (causes, available or not training courses, industry coverage). EDDIE is currently investigating different curricula both in University studies and VET and in different countries, to see if that matters are covered in the curricula. The status of young professionals and graduate students about skills is under study as well.



Figure 2-50. IAB meeting #1 - photo with the participants

- Geographical dimension of EDDIE and how could the skills requirements and gaps be analyzed by country.
- Exploitation of the results as the main purpose of the project is to get the maximum sustainability of its blueprint strategy.
- Involvement of more countries in EDDIE investigations and assessments
- Website and social media interactions.

A picture with the participants can be seen in Figure 2-50.

Also, a survey was launched to the participants on early December 2020 to get specific external evaluation from IAB members to get on external evaluation outcome. Survey was prepared and launched by COMILLAS and DNV GL. Suggestions for improving or extending Eddie's current strategy and objectives are also collected throughout the survey. The importance of involving the associations of universities, the institutions that provide technical education and extend the current survey to other countries behind the consortium is pointed out on the survey. The most expected relevant result of a project focused on the digitization of the energy sector is strengthening of the training and educational system with more communication between all the partners involved that will allow for a new era in energy which improves sustainability without negative impacts on occupational levels. Improve safety, productivity, accessibility and sustainability of energy systems. Breaking down the traditional boundaries between key sectors of the economy (energy, transport, buildings), opening the door to a new era of flexibility and supporting the achievement of a carbon neutral economy is stressed. Actions suggested to achieve those relevant results includes mainly social media campaigns to raise public awareness and reach out to all the partners involved; streamline the interaction with the main representatives of the industry and the relevant associations of education providers is also pointed out. Control and conclusions of this first survey were reported to the EACEA , within the appropriate project reporting documentation.

2.5.2. 2nd Advisory Board Meeting – June 2021

The Partners involved in the strategic implementation of EDDIE project and the external experts, participated, and actively contributed at the 2nd International Advisory Board (IAB) of EDDIE Project hosted Online. This relevant meeting was organized by the project coordinator COMILLAS, on Thursday 10th of June 2021. The role of Education in the Digital Era for Digitalization will create the framework for EDDIE Project to take part in the decision-making process of Digitalization of the European Energy Sector (DEES).

The 2nd International Advisory Board highlighted important and relevant topics for the current state of the project, best practices in education, blueprint strategy, stakeholder database, and dissemination activities tailored for EDDIE stakeholders. In addition, the focus was also on the assessment of the First Technical Progress Report which received positive reaction from the European Education and Culture Executive Agency (EACEA). Moreover, the path and strategies towards a new context of Education for Digitalization of Energy Sector, exploitation of the results, website, and social media interactions, were also topics on the 2nd IAB meeting agenda.

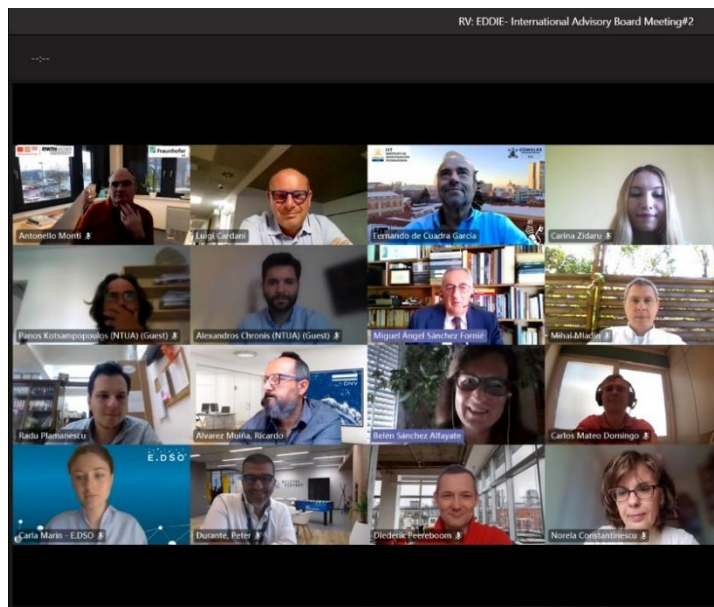


Figure 2-51. IAB meeting #2 - photo with the participants

The interaction with the external experts (Figure 2-51) was very active and productive, giving EDDIE the opportunity to update its activities and developments. As a result, new plans will include areas of digitalization of energy transmission and distribution grids including smart grids and smart metering infrastructures, information, and communication systems for the energy sector like data management and cyber-security, new energy services and transition and digitalization of energy supply and generation. Moreover, it has been decided that the future SSA will not only be based on focus countries, but also will consider particularities of regions in transition when it comes to upskilling and reskilling needs as those regions are moving to cleaner forms of energy, pathways to a climate neutral society and economy. Based on such examples, EDDIE shall be in the position to elaborate and disseminate “best practices” and “success stories”. The identification of skill gaps will be assessed for a broader geographical coverage, including other fields of energy with the aim of improving the relevance of the activities and innovation in the holistic approach.

To promote and disseminate this meeting and to provide more information on the progress of the project, EDDIE consortium created a dedicated document as a press release that was posted on the website and shared on the social media channels. The document is listed under the [NEWS](#) section on the website and can be found [here](#) as well. A print screen of this document is in Figure 2-52. All these actions were disseminated on social media as well.

Besides that, as a main conclusion it was decided to conduct a second survey as it was demonstrated as the most efficient tool to provide insights and comments to the overall project objective and activities.



2nd INTERNATIONAL ADVISORY BOARD for EDDIE PROJECT

The Partners involved in the strategic implementation of EDDIE project and the external experts, participated and actively contributed at the 2nd International Advisory Board (IAB) of EDDIE Project hosted Online. This relevant meeting was organized by the project coordinator COMILLAS, on Thursday 10th of June 2021. The role of Education in the Digital Era for Digitalization will create the framework for EDDIE Project to take part in the decision making process of Digitalization of the European Energy Sector (DEES).

EDDIE – „Education for Digitalization of Energy”, funded by the European Commission (EC) under the ERASMUS+ Program 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 organizations, recruiters, social partners, and public authorities. The main objective of this SSA is to develop a long-driven Blueprint for the DEES to enable the matching between the current and future demand of skills necessary for the DEES and the supply of improved Vocational Education and Training (VET) systems and beyond.

The International Advisory Board plays a key role as an independent external quality consultant in the project, and it is providing requirements and inputs on goals and issues, monitoring project milestones and supporting with final feedback on results and future expectations in other sectors and other blueprints. Quality assessments are performed throughout the entire implementation period together with project progress reports. Members of the IAB are important stakeholders from the European Energy sector as follows: EUROGAS; DERlab - European Distributed Energy Resources Laboratories; FSR - Florence School of Regulation; T&D Europe; CESI - European Confederation of Independent Trade Unions; The City of Aachen; DAFNI Network; City of Herne; ENTSO.E - European Network of Transmission System Operators for Electricity and ItalGas.

Figure 2-52. EDDIE's press release on the 2nd IAB meeting

For this event, CRE Association shared [content](#) and information for its members. All the communication was posted on CRE website and on its social media channels. A print screen of this document is in Figure 2-53.



CRE
Centrul Român al Energiei



THE ROMANIAN ENERGY CENTER ASSOCIATION PARTICIPATED AT THE 2nd INTERNATIONAL ADVISORY BOARD WITHIN EDDIE PROJECT

5th of July 2021, Carina Ioana ZIDARU

The representatives of the Romanian Energy Center (CRE) Association participated and actively contributed at the 2nd International Advisory Board (IAB) of EDDIE Project – „Education for Digitalization of Energy”, hosted Online. This relevant and important meeting was organized by the Project Coordinator COMILLAS, on Thursday, 10th of June 2021. The role of Education in the Digital Era for Digitalization will create the framework for EDDIE Project to take part in the decision making process of Digitalization of the European Energy Sector (DEES).

In 2020, CRE expanded its research and innovation portfolio, through the European Project “EDDIE” - „Education for Digitalization of Energy”, funded by the European Commission (EC) under the ERASMUS+ Program. The main objective of 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 organizations, recruiters, social partners, and public authorities. The main objective of this SSA is to develop a long-driven Blueprint for the DEES to enable the matching between the current and future demand of skills necessary for the DEES and the supply of improved Vocational Education and Training (VET) systems and beyond.

The International Advisory Board plays a key role as an independent external quality consultant in the project,

Figure 2-53. CRE's press release on the 2nd IAB meeting for EDDIE project

2.5.3. 3rd Advisory Board Meeting – November 2021.

The 3rd International Advisory Board Meeting (Figure 2-54) highlighted interesting and significant topics for the development of the project, the feedback, dissemination and stakeholders' campaign, best practices in education for Vocational Education and Training (VET), university and continuous learning, blueprint strategy and latest actions on stakeholders mapping. Dissemination activities within EDDIE Project which includes social media interactions, exploitation of the results, various actions on EDDIE's website were addressed in the 3rd IAB meeting. With regards to the dissemination activities, the EDDIE Project started a new topic news on its website addressing relevant policy briefs for the Energy Sector. The main objective consists in informing the interested audience about critical subjects regarding Energy, Digitalization, Skills and Competences, under the format of a summary.

Additionally, in the 3rd IAB Meeting there was presented in detail the Quality Assessment Report for the Analysis of the previous meeting.

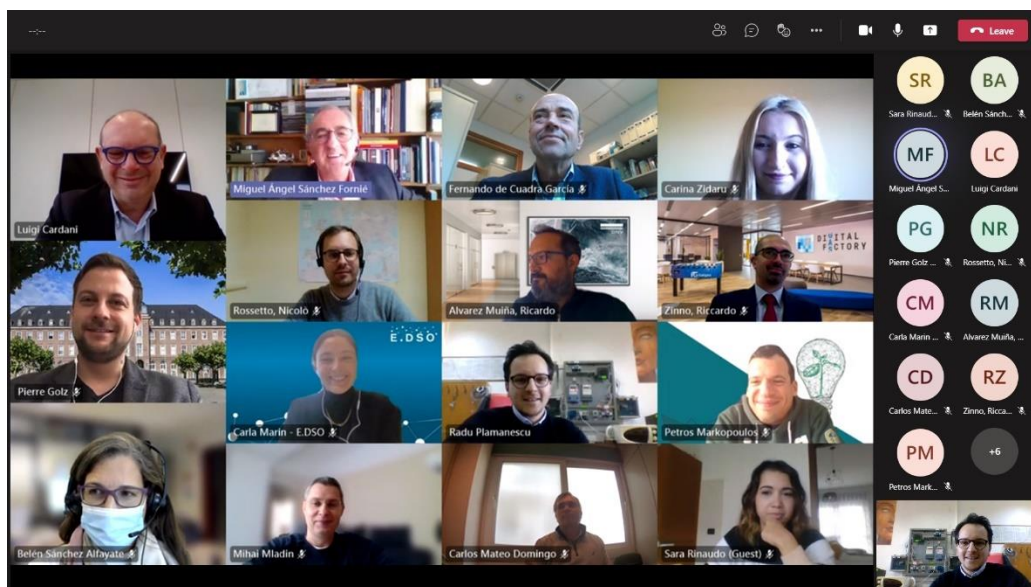


Figure 2-54. IAB meeting #3 - photo with the participants

The feedback from the IAB members was positive with comments on the work that has been done and the strategy of EDDIE towards the right direction. Remarks were made on the importance of upskilling and reskilling in all sectors and for the energy sector at the transition. One of the challenges of this project is to include all profiles of stakeholders (with all the differences) as VET institutions, Universities, technicians, top managers, students, etc. Channels to reach them are different, as well as their interests. The status of the project and the progress of the work was underlined by DAFNI, especially with respect to the skills demand and the skills gaps. One point to stress is the geographical dimension (rural- mountain- islands) in terms of markets and education.

To promote and disseminate this meeting and to provide more information on the progress of the project, EDDIE consortium created a dedicated document as a press release that was posted on the website and shared on the social media channels. The document is listed under the [NEWS](#) section on the website and can be found [here](#) as well. A print screen of this document is in Figure 2-55. All these actions were disseminated on social media as well.



3rd INTERNATIONAL ADVISORY BOARD OF EDDIE PROJECT

Representatives of EDDIE Project - „**Education for Digitalization of Energy**“, the Partners involved in the strategic implementation, important members and the external experts, participated and actively contributed at the 3rd International Advisory Board (IAB) of the Project which took place in the Online Environment. This important meeting was organized by the project coordinator COMILLAS Pontifical University, on Thursday, 25th of November 2021. The role of Education in the Digital Era for Digitalization will create the framework for EDDIE Project to take part in the decision-making process of Digitalization of the European Energy Sector (DEES).

The 3rd International Advisory Board Meeting highlighted interesting and significant topics for the development of the project, the feedback, dissemination and stakeholders' campaign, best practices in education for Vocational Education and Training (VET), university and continuous learning, blueprint strategy and latest actions on stakeholders mapping. Dissemination activities within EDDIE Project which includes social media interactions, exploitation of the results, various actions on EDDIE's website were addressed in the 3rd IAB meeting. With regards to the dissemination activities, the EDDIE Project started a new topic news on its website addressing relevant policy briefs for the Energy Sector. The main objective consists in informing the interested audience about critical subjects regarding Energy, Digitalization, Skills and Competences, under the format of a summary.

Figure 2-55. EDDIE's press release on the 3rd IAB meeting

For this event, CRE Association shared content and information for its members. All the communication was posted on CRE website and on its social media channels. A print screen of this document is in Figure 2-56



THE ROMANIAN ENERGY CENTER ASSOCIATION PARTICIPATED AT THE 3rd INTERNATIONAL ADVISORY BOARD WITHIN EDDIE PROJECT

25th of November 2021, Carina Ioana ZIDARU

The representatives of the Romanian Energy Center (CRE) Association participated and actively contributed at the 3rd International Advisory Board (IAB) of EDDIE Project – „Education for Digitalization of Energy”, hosted Online. This relevant and important meeting was organized by the Project Coordinator COMILLAS, on Thursday, 25th of November 2021. The role of Education in the Digital Era for Digitalization will create the framework for EDDIE Project to take part in the decision-making process of Digitalization of the European Energy Sector (DEES).

In 2020, CRE expanded its research and innovation portfolio, through the European Project “EDDIE” - „Education for Digitalization of Energy”, funded by the European Commission (EC) under the ERASMUS+ Program. The main objective of 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 organizations, recruiters, social partners, and public authorities. The main objective of this SSA is to develop a long-driven Blueprint for the DEES to enable the matching between the current and future demand of skills necessary for the DEES and the supply of improved Vocational Education and Training (VET) systems and beyond.

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Figure 2-56. CRE’s press release on the 3rd IAB meeting for EDDIE project

2.6. Plan for future events

The stakeholder analysis – and therefore the database of stakeholders – is under definition and construction for the practical uses of the Blueprint. The way to store, update and access the information about stakeholders must, of course, be efficient and compatible with data protection standards. With respect to the contents and structure of that information, the database is designed to provide relevant information for the public, and private information for the entities that will be part of it. The platform will provide to its members a lot of activities and possibilities of interaction such as research, consulting, training, sponsorship, validation, certification, dissemination, hiring, etc. It will become a marketplace for: research and events, jobs, training programmes, training contents, resources, services, tools, and systems, etc.

A first event envisioned for 2022 will showcase this marketplace and will invite all the stakeholders to be part of the web portal, providing services for all the groups in the digitalization of the Energy Sector. Different types of services will be analyzed separately, to determine their level of feasibility, sustainability, and overall impact.

Potential venues for hosting such an event include:

- **Innogrid 2022.** As in the previous edition (hosted online), EDDIE plans to have a stand in the exhibition hall and apply for a policy conference with the help of EDSO as part of the organizing committee.
- **EUSEW 2022.** EDDIE will apply for a stand at the energy fair in the Networking village (to be announce the date and time), potentially together with other EU funded projects, synergies with projects under the implementation EDDIE partners. In addition, an application for a policy session is planned in collaboration with DG Energy.
- **Enlit Europe 2022.** As for 2021, EDDIE will be part of the event, as a virtual and on place stand (booth) to promote its results and assessments.

Besides that, an important area of activities planned for this next part of the project would be to define and carry the pilot test in the city of Aachen where there will be a set of opportunities for event and dissemination.

3. Conclusions

Numerous events were organized and attended in the first two years of the project with the purpose of communication and dissemination the most relevant results and conclusions about the ongoing project work. Also, attendance to events related to energy transition and digitalization gave the project new insights to be very much considered to enrich its activities. EDDIE target audience stakeholders' groups include relevant policy makers, energy industry experts, research community as well as student and professionals that need to broaden their knowledge and specialize in the field of digitalization for the energy value chain.

EDDIE has created awareness of the ongoing work for skills gaps identification, best practices in the field but also to the strategy definition for the long-term objective to help create a highly skilled workforce. The future employees will help improve of the competitiveness of the European Energy Sector, the harmonization of processes for an accurate and successful digitalization of the sector and for a smart, inclusive, and sustainable growth. All the activities were aimed at collecting feedbacks and inputs from stakeholders and advisory board members during the organization of dedicated events and from the interaction with representatives of European institutions.

Various EDDIE partners participate actively to high level EU initiatives like the DG Energy meetings, and to several working groups of the ETIP-SNET platform (European Technology and Innovation Platform Smart Networks for Energy Transition). This commitment not only helps us to get visibility for the project but enables a fruitful exchange of experiences and ideas between EDDIE and other Erasmus+ funded projects, institutions, and policy makers at the European level.

Furthermore, EDDIE has created awareness of the project technical work and has disseminated the results through the organization and participation in numerous targeted events (workshops, scientific and technical conferences, exhibition fairs etc.) and has planned even more aiming at pushing ahead the sharing of knowledge and ideas and at driving the dialog with the different target audiences.

EDDIE is developing the blueprint strategy for the Digitalization of the Energy value chain (BSDE) based on sustainable cooperation among key industry stakeholders' groups, training providers, social partners, and public authorities. The blueprint will match current and future skills demand and supply adapted transnational contents, tools, and methodologies from education and training providers.

4. References

- [1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- [2] <https://ec.europa.eu/social/main.jsp?catId=1517&langId=en>

List of Figures

Figure 2-1. EDDIE at the webinar "The European Green Deal: Smart Grids at the Center" organized by COMILLAS	11
Figure 2-2. Master Classes given by Manuel Sanchez Jimenez (left) and Agustin Delgado (right).	12
Figure 2-3. Statistics for the first international online conference organized by CRE	13
Figure 2-4. Integrated Approach in the Management and Operation of Electricity Transmission and Distribution Networks event	13
Figure 2-5. CRE's press release for the first international online videoconference	13
Figure 2-6. EDDIE's Newsletter #3 with ErasmusDays logo	14
Figure 2-7. ErasmusDays logo 2020	14
Figure 2-8. EDDIE Webinar Highlights	15
Figure 2-9. Example of a press release on behalf of CRE	15
Figure 2-10. Strengthening Education for Sustainable Energy Transition & Digitalization – Dissemination	16
Figure 2-11. Photos during the presentations of EDDIE Representatives during 2021 IEEE SG4SC	17
Figure 2-12. 2021 IEEE SG4SC event highlights.....	17
Figure 2-13. CRE's press release to its members for 2021 IEEE SG4SC events	17
Figure 2-14. EDDIE's Virtual Booth during 2021 IEEE SG4SC event.....	18
Figure 2-15. PES PowerTech 2021 banner and presentation of EDDIE.	19
Figure 2-16 – Erasmus Days logo 2021	20
Figure 2-17. EDDIE's press release for ENLIT Europe 2021	21
Figure 2-18. CRE's press release on ENLIT Europe 2021	21
Figure 2-19. EDDIE at ENLIT Europe 2021	22
Figure 2-20. EDDIE's virtual booth at Enlit Europe 2021	22
Figure 2-21. Presentation during the Webinar hosted by the University of Seville	23
Figure 2-22. INNOGRIG - Virtual Sessions	24
Figure 2-23. European Vocational Skills Week	25
Figure 2-24. Growing the Energy Transition - Platone project synergies with EDDIE project	26
Figure 2-25. Icae event frontpage and presentation on microgrids and EDDIE role in education for digitalization of electrification planning.	27
Figure 2-26. Presentation during Energy Education in the Future event	27
Figure 2-27. Innovations for operating power systems with increasing shares of variable renewables	28
Figure 2-28. Skill Building for the Energy Transition - Presentation during the webinar	29
Figure 2-29. EDDIE project - commitment for Pact for Skills	30
Figure 2-30. EDDIE's Press release for Pact for Skills.....	30
Figure 2-31. CRE's press release on Pact for Skills.....	31
Figure 2-32 – " Skill Building for the Energy Transition"	32
Figure 2-33. CRE's press release on "Remote Testing & EIRIE Platform" webinar	33
Figure 2-34. "Remote Testing & EIRIE Platform" Webinar	33

Figure 2-35 - Launch of the New Manifesto for Enhancing Digital Competences across Europe	34
Figure 2-36 - Professional Higher Education and sustainable development: creating a change that endures	35
Figure 2-37 – Power Summit 2021 - Electric Decade	35
Figure 2-38. 4th E.DSO-ENCS-ENTSO-E Webinar on Cybersecurity “Enhancing our grid resilience”	36
Figure 2-39. CRE's press release on the "10th INNOGRID EDITION – "Living the Transition" Event, CRE As	37
Figure 2-40. 10th INNOGRID EDITION - "Living the Transition" - photos from the event	38
Figure 2-41. Workshop on Analyzing and Comparing VET Qualifications	38
Figure 2-42. SEFI annual conference.....	39
Figure 2-43. “The Truth about Sector Coupling” - opening of the event	40
Figure 2-44. Cover of Euroelectric's report.....	41
Figure 2-45. 3rd Coordinet Stakeholder Forum – Roadmap for a Green Deal fir market design	41
Figure 2-46. Photovoltaics Enabling Sustainable Energy Communities: Technological Drivers and Emerging Markets	42
Figure 2-47. The role of MOOCs in the new educational scenario. A poster presented on POLIMI Platform	43
Figure 2-48. Supporting Regulatory Measures in the Context of Big Data Applications for Smart Grids – open access article in Frontiers.	44
Figure 2-49. IAB members of EDDIE	45
Figure 2-50. IAB meeting #1 - photo with the participants	46
Figure 2-51. IAB meeting #2 - photo with the participants	47
Figure 2-52. EDDIE's press release on the 2 nd IAB meeting.....	48
Figure 2-53. CRE's press release on the 2nd IAB meeting for EDDIE project	48
Figure 2-54. IAB meeting #3 - photo with the participants	49
Figure 2-55. EDDIE's press release on the 3rd IAB meeting	49
Figure 2-56. CRE's press release on the 3rd IAB meeting for EDDIE project	50