

**EDUCATION IN THE DIGITAL ERA FOR DIGITALIZATION - "2021 IEEE INTERNATIONAL FORUM ON SMART GRID FOR SMART CITIES"
CONFERENCE HIGHLIGHTS**

EDDIE project participated and was part of the Project Zone in the Online Video-Conference organized by IEEE Smart Grid in collaboration with RWTH Aachen University. During the Conference, EDDIE Project – „*Education for Digitalization of Energy*”, created the context for the interventions in Tech Session 8 „*Education in the Digital Era for Digitalization*” on Tuesday, 23rd of March 2021, from 17:00 – 18:30 CET, within a lineup secured by distinguished professors and researchers from high ranked universities. The role of Education in the Digital Era for Digitalization and the Development of synergies with other innovation projects funded by the European Commission (EC) through the ERASMUS+ and H2020 program will create the framework for EDDIE Project to actively contribute to decisions in the process of Digitalization of the European Energy Sector (DEES).

“[2021 IEEE International Forum on Smart Grids for Smart Cities](#)” ended its 3rd edition, a five-day Event, on the 23rd of March. In the session „*Education in the Digital Era for Digitalization*” organized by the IEEE PES Task Force on “Innovative teaching methods for modern power and energy systems” different angles of the topic were addressed like New Trends in Education and Training in Engineering, Educational Services in Energy Transition and Education at the Nexus of Smart Grids and Smart Cities. EDDIE representatives, Miguel SANCHEZ-FORNIE and Panos KOTSAMPOPOULOS, covered the general context for the important role of Education for Digitalization within the Energy Sector presenting core insights about the project development supported by data results regarding Emerging Skill Needs of the Industry and Skill Offer of Education Providers.

“**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.



Opening and moderating Tech Session 8 „*Education in the Digital Era for Digitalization*”, Panos KOTSAMPOPOULOS - Senior Researcher, National Technical University of Athens (NTUA) invited speakers, professors, and researchers to discuss challenges related to Education in the Digital Era for Digitalization to identify the essential areas where action is needed and to shape several directions on addressing the challenges of the present subject.

The speakers that contributed with their ideas and visions to the important and pragmatic discussions within this session were: Carlo Alberto NUCCI - Professor at University of Bologna; Ferdinanda PONCI - Professor at RWTH Aachen University; Miguel Angel SANCHEZ FORNIE - EDDIE Consortium Coordinator, Comillas University; Panos KOTSAMPOPOULOS – Senior Researcher at NTUA; Anil PAHWA – Professor at Kansas State University.

Carlo Alberto NUCCI - Professor at University of Bologna pointed out during his presentation the high impact of the pandemic on the delivering format of the lectures and its effect of accelerating the ongoing transition, despite the negative effects and if adequately accomplished, the remote teaching shall become an invaluable asset. Also, **Carlo Alberto NUCCI** highlighted the importance of revising Electrical Engineering Programs, as the multidisciplinary skills are required now even more than they were in the past such as smart grids are enablers for Smart Cities.

Ferdinanda PONCI - Professor at RWTH Aachen University presented the overview of the ASSET Project, funded by the EC under the H2020 Research and Innovation Programme, that aims at delivering a framework and tools to create and share knowledge and competences needed for the energy transition. In this regard, **Ferdinanda PONCI** underlined the motivation - Europe is transitioning towards a low carbon society - but also the challenges faced during the process like upskilling staff with multidisciplinary competencies, intensifying research (liaised with industry), strengthening the industry-academia relationship etc.

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. Then, the coordinator presented the **EDDIE** Project. „Energy Transition is a must and digitalization shall accelerate it. Sustainability and the human life on our planet require a fundamental modification of all the parts of the

whole value chain in the Energy Sector. Digitalization is and will be affecting the energy and other economic sectors of our society. This is a concept based on the technology whose main elements are: data which also means connectivity, telecommunications, and information processing”, said **Miguel Angel SANCHEZ-FORNIE**. Further on, he presented 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. Considering all the above aspects the „EDDIE Project has to be fully seen as an initiative of the EC and the actual policy context very much conducted to the area of the Green Deal and the Digital Europe Programmes”, said the Consortium Coordinator.

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. „The work performed by EDDIE Partners to identify skill gaps, points out that the key areas towards digitalization, as reflected by different analyses in this work, targets data management and analysis, big data, cybersecurity, programming and development competences”, mentioned **Panos KOTSAMPOPOULOS**. Furthermore, he added that even though the university curricula, online training platforms as well as industrial training programmes cover several aspects of digitalization, there is yet plenty of room for improvement to foster the digital transformation.

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Anil PAHWA – Professor at Kansas State University pointed out that the concept of the Grid of the Future implies a high penetration of Renewable Energy Sources (RES) – wind and solar, the flexible changing demand profiles and consumers’ engagement, a strong cybersecurity of power grid and the integration of power electronics for power system operation. In this regard, **Anil PAHWA** underlined that the Smart Cities’ management includes the following: data driven models, privacy and cyber security, human behavior modeling and co-optimization of resources. In terms of Educational Opportunities he pointed out the convergence of engineering, computer, and social sciences and highlighted the need for educational programs covering different disciplines like electrical engineering, civil engineering and computer science.

Further on, the addressed topics were discussed during the Q&A session.

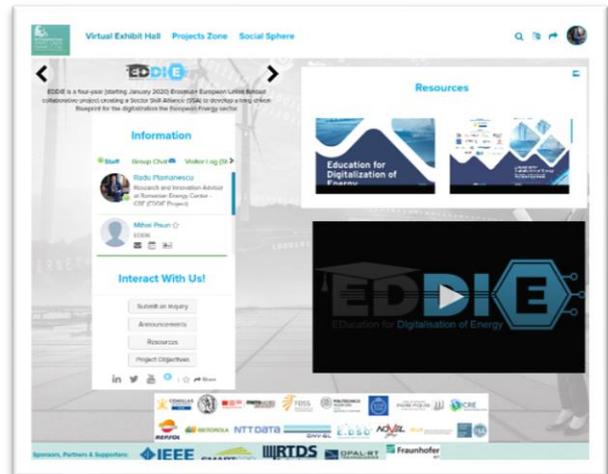


The first question addressed by **Panos KOTSAMPOPOULOS** to Professor Carlo Alberto NUCCI, was about if and how we can exploit the pandemic experience for the benefit of education. Professor Nucci pointed out that the main conclusion to be drawn is that the big mistake the education providers can make is to use the same type of lecture for both face-to-face classroom and online teaching. Also, in the case of a hybrid teaching option [part online and part offline] it is very difficult to provide an effective lecture in these conditions.

On the same topic, Professor **Anil PAHWA** also mentioned his experience in the USA with both online teaching – in the initial months of the pandemic, and hybrid teaching - later in the fall, concluding that the fully remote learning process was required only in critical situation.

Also, a question from the audience came up regarding the way in which someone can get involved in the ASSET project. Professor PONCI pointed out that by joining the community, access will be available for the structure of the courses with examples of the topics and related outcomes description. The same things are available for the MOOCs. By becoming a member, you can create your own learning graph for your own course with your own learning objectives. Afterwards, it can be developed and put in the marketplace.

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.



Conclusions and Final Remarks

The landscape in Education in the Digital Era for Digitalization is very nuanced due to the high number of challenges that the Energy Sector is currently facing. Numerous solutions for a more digitalized world are being proposed or are in development, and the Academia, the Research and Development institutions, as well as Industry should collaborate for a common good. In this regard, the EDDIE project is a reference example, as it proposes an innovative strategic approach for Education in the European energy Sector as an industry-driven movement, where the skills emerge as a need of the real application instead of the classic approach that starts from fundamentals to reach application.

