“Managing CROSS-BOrder Renewable Energy Production and Storage in Transnational Wholesale Markets to Meet Climate Change Mitigation Targets”

Virtual Conference

Thursday 17 June, 2021

14:00 - 17:15

Organizers:

Department of Business Administration

National and Kapodistrian University of Athens (NKUA)

&

Pubic Power Company S.A. (PPC)

With the support of the

Center of Excellence for Energy and Renewable Sources and Transportation, **NKUA**

About the Conference

The original need to make public the results of the Horizon 2020 project under the name CROSSBOW has provided the opportunity for a broader presentation of the issues related to the management of production and storage of electricity generated from renewable sources (RES) at regional, national and cross-border levels. Thus, we will present the effects of a high penetration of variable and distributed RES on the demand for cross-border electricity transmission in Europe. We will highlight the impacts of different electricity generation and transmission portfolios.

More importantly, we will refer to wind and solar energy curtailment variations on load duration under high penetration conditions of variable RES. The highly variable nature of RES affected by both seasonal and hourly weather variability, with the support of new systems and tools can be effectively integrated into the power system. The Internet and ICT enable innovations for the smarter use of energy known as Smart Grids, handling data through remote sensing, control, and monitoring processes. Evidently, RES and Smart Grids rely on automation and supervision technologies for optimal, reliable and secure operation of equipment (sensors and actuators), implementation control algorithms (Programmable Logic Controllers, PLC) as well as software entities responsible of processing and displaying data of the process, commonly called Supervisory Control and Data Acquisition (SCADA) systems.

Wind and solar energy may support the production of green hydrogen, also called renewable hydrogen to produce, store, and use electricity discretely. Fuel cells use green hydrogen to respond to power short-term energy load deficits. In fact, electrolysers use wind/solar peak savings to produce green hydrogen from water, hence, providing bulk energy storage (Power-to-Gas). An integrated energy system in EU requires at least 40 GW of green hydrogen electrolysers and the production of up to 10 million tonnes of green hydrogen by 2030. The conversion of RES power to green hydrogen and use of this green hydrogen in the gas grid (P2G), in the transport sector, or in the industry shall speed-up the decarbonisation of these sectors and help level out the peaks and troughs inherent in the temporal and geographical variability of RES. It will also pave the way for skills development and new employment opportunities in the post-Covid19 recovery strategy of the EU.

VIRTUAL CONFERENCE PROGRAMME

14:00	**WELCOME AND INTRODUCTION (10')** **Prof. Nikos Milonas**	**NKUA**
14:10	**ROUND TABLE DISCUSSION I (60')** **THE PROJECT CROSSBOW** **Moderator: Anastasios Varthalis - PPC**	
14:10	**CROSSBOW OVERVIEW & DELIVERABLES (15')** **Speaker: Dr Anestis Anastasiadis**	**PPC**
14:25	**CROSSBOW IN THE CONTEXT OF THE "GREEN DEAL" (15')** **Prof. Nikolaos Milonas**	**NKUA**
14:40	**LESSONS LEARNT FROM CROSSBOW ON THE IMPACT OF RENEWABLES INTEGRATION ON THE ENERGY SYSTEM (15')** **Speaker: Mihai Pawn**	**CRE**
	DISCUSSION – Questions (15')	
15:10	**ROUND TABLE DISCUSSION II (75')** **MAXIMISING THE IMPACT OF TSO-DSO ON SMART GRID GROWTH & FUNCTION** **Moderator: Dr George Mergos – NKUA**	
15:10	**REGULATORY FRAMEWORK REGARDING THE OBLIGATION OF TSOS, DSOS AND SIGNIFICANT GRID USERS TO EX-CHANGE DATA (15')** **Speaker: Dr George Loizos**	**RAE**
15:25	**CROSS-BORDER ELECTRICITY TRADING IN SOUTHEAST EU-ROPE TOWARDS AN INTERNAL EUROPEAN MARKET (15')** **Speaker: Nikolaos Andriopoulos**	**ADMIE**
15:40	**TSO-DSO INTERACTION AND ITS IMPACT ON SMART GRIDS (15')** **Speaker: Dr. Christos Christodoulou**	**DEDDIE**

15:55	**THE AUTONOMOUS ISLAND GRIDS OF THE AEGEAN SEA (15')** **Speaker: Dr. Anestis Anastasiadis**	**PPC**
	DISCUSSION – Questions (15')	
	15-minute Break	
16:25	**ROUND TABLE DISCUSSION III (60')** **THE ROLE OF GREEN HYDROGEN ON POWER SYSTEM FLEXIBILITY AND STABILITY** **Moderator: Dr Chris Ashe-Elfi-Tech**	
16:25	**GREEN HYDROGEN PRODUCTION POTENTIAL ON POWER SYSTEM FLEXIBILITY(15')** **Speaker: Prof. Vasilios Stathopoulos**	**NKUA**
16:40	**GREEN HYDROGEN PRODUCTION & STORAGE INNOVATIONS SUPPORTING DECARBONISATION (15')** **Speaker: David Surplus**	**B9 Energy**
16:55	**IMPACT OF GREEN HYDROGEN ON SKILLS DEVELOPMENT, EMPLOYMENT AND VALUE ADDED (15')** **Speaker: Dr. Chris Ashe**	**EIFI-TECH**
	DISCUSSION – Questions (10')	
17:10	**CONCLUDING REMARKS (10')** **Dr. Lilly T. Christoforidou** **Anastasios Varthalis**	**NKUA/PPC**

LOGOS OF PARTICIPATING LEGAL ENTITIES