IEEE PES Power & Energy Society® Italy Chapter - PE31

IEEE ITALY SECTION

UNIVERSITÀ DEGLI STUDI DI GENOVA

DITEN

Dipartimento di Ingegneria Navale, Elettrica, Elettronica e delle Telecomunicazioni
Scuola Politecnica, Università degli Studi di Genova

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# IEEE Italy Section

# 2019 Industrial Distinguished Lecturer

## *"Key role of power systems in decarbonizing human activities: how to ensure security and reliability"*


## Bruno COVA

### Director of Systems Planning Unit at CESI - Milano


## Monday 25th May 2020 at 11.00 – 13.00

**via TEAMS:** Join Microsoft Teams Meeting Conference ID: 378 476 315#

**Ore 11.00** welcome

**Stefano Massucco**, Coordinator for the BsC and MsC courses in Electrical Engineering at University of Genova, vice Chair IEEE Italy Section.


**Abstract**

The presentation will offer an international perspective on renewable energy integration in the power systems, along with current and future challenges set by the ambitious targets on renewable energy sources. Keeping the grid reliable and secure as renewable growth accelerates are significant industry concerns.

At first the current situation and future perspectives of RES generation deployment in Europe and the US and Europe will be recalled. In this context the European roadmap towards a decarbonized economy will also be presented.

Starting from some strained operational conditions already occurred and caused by a high share of V-RES generation, an overview of the challenges to be dealt with to ensure system reliability and warrant stability in dynamic conditions will be given.

The core of the presentation will then focus on the measures to be undertaken to ensure a smooth transition to progressively decarbonized power systems transforming potential threats into opportunities. A mix of solutions will be discussed such as the role of transmission network and related assets (from Var compensation equipment to synchronous condensers); evolution of market models and market integration; measures to enhance flexibility (storage, role of EV, non-conventional devices and solutions); interaction between TSO/DSO and digitalization.

In general, this system (r)evolution calls for massive investments. Thus, justification of investments becomes of key importance. A recall on the benefit indicators used in Europe will be given together with the need for state-of-the-art computational tools, relying particularly on a probabilistic approach to address the uncertainty in the future scenario

and notably the variability of RES generation.

Finally, an outlook of the impact the current pandemic is causing on the European interconnected system and particularly in Italy will be presented considering the high share of V-RES generation over the falling power consumption during the lockdown weeks in March and April 2020. Some first messages that can be drawn will be discussed.

**Bruno Cova's short Curriculum Vitae**

Bruno Cova has a MSc in Electrical Engineering. Since 1986 he has been working in Milan for CESI, a consultancy company focused on electrical system design, testing and certification. At present, he is the director of Systems Planning Unit. He has extensive experience of transmission planning and feasibility studies relevant to power system interconnections and generation from renewable sources, notably in Europe, the southern and eastern Mediterranean region and some countries of Latin America and sub-Saharan Africa.

Bruno Cova has been engaged for years in international associations such as CIGRÉ and WEC (World Energy Council).

Within CIGRE he has been convenor of WG C1.4 "Applications and required developments of dynamic models to support practical planning" and in 2007 he received the CIGRÉ Technical Committee award in recognition of his outstanding contribution to Study Committee C1 "System Development and Economics".

From 2014 he's CIGRÉ distinguished member and he's currently the Italian officer at CIGRÉ Study Committee C1.

Bruno Cova has been speaker at the IEEE PES General Meeting 2019 in the panel session on "Transmission Infrastructure Development for High Levels of Renewable Penetration".

He's author of more than 70 papers presented at international and national conferences.

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