

SEMINARIO

Solar PV Integration to grids: Impacts and Solutions

8 marzo 2019

Università degli Studi di Palermo
Viale delle Scienze Edificio 9 - aula U140

Ore 15:00 Registrazione

Ore 15:15 Apertura – Prof. E. Riva Sanseverino

Ore 15:30 Solar PV Integration to grids: Impacts and Solutions – Prof. Quoc -Tuan TRAN

Ore 17:30 Discussione

Ore 18:00 Chiusura Lavori

Biografia

Prof. Quoc-Tuan TRAN received his PhD degree in Electrical Engineering and his “Habilitation à Diriger des Recherches” degree (Dr. Habil) from the Grenoble Institute of Technology (Grenoble-INP), France, in 1993 and 2000, respectively. He is actually Professor at the INSTN (Paris Saclay University) and International Expert at the CEA (Atomic Energy and Alternative Energies Commission), Scientific Manager for Smart Grids at the CEA/INES (National Institute for Solar Energy) and Teacher at the INSTN and the Communality of Grenoble-Alpes University. His research interests are in the fields of smart-grid, microgrid, power system, renewable energy, and energy management and control. He holds 6 patents, is (co-)author of five books, and author of more than 200 publications in journals and conference proceedings. He has supervised 36 PhD students. He has realized and piloted more than 50 projects. He is senior member IEEE and Member of executive committee of Smart Grid Institute.

Abstract

Increasing integration of renewables, in particular solar PV integration along with the electrification and decarbonisation challenges the existing grid infrastructures due to their intermittent characteristics with high levels of uncertainty and complexity. Several impacts on the grid operation include voltage variations, frequency variation, voltage unbalance, stability, protection and challenges for managing... These impacts are even more complicated for islanded or weak grid areas. A better knowledge, analysis and evaluation methods of the induced constraints become necessary in order to determine the hosting capacity, to assess impacts of renewable generation on distribution network and to assess technical and economic opportunities provided by renewable generation. This seminar presents experiences of CEA-INES for analysing impacts provided by PV integration into grid, solutions by intelligent control and energy management in order to reduce these impacts, to maximize the ancillary services contributed by PV installations and to maintain the grid stability are discussed, solutions associated with energy storage and development of micro-grid technologies will be presented to address mentioned grid challenges.

Alla frequenza del seminario verranno attribuiti CFU