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Title:	Professor at the National Technical University of Athens Greece	
Presentation title:	<p><b>Reliability-based Operational Strategies for Energy Storage                  Systems in Transportation Systems Applications</b></p>	
<p>The high capital investment cost for energy storage systems constitutes a major obstacle to their widespread deployment. The use of batteries (BESS) has already been applied for the integration of renewable energy sources (RES) into the electricity grid and their participation in appropriate auxiliary services. However, their application in transportation systems is not significant until now since they have mainly been used for the daily operation of the electric vehicles (EV). However, the EVs are not only considered as green transportation means but they can also be envisaged as an active and, more importantly, flexible part of the future electricity distribution grid. Their batteries can act as loads during valley periods and hours with high RES production in the neighborhood while they can also be electricity producers during peak hours (prosumers). Additionally, RES can be used effectively in EV charging facilities constituting attractive green solutions even in urban environment. This new role of BESS in transport systems applications requires an increased level of their reliability performance as well as accurate real time information concerning their State of Charge (SoC) and their State of Health (SoH). The existing operational strategies of the BESS do not consider very important parameters such as their reliability indices, maintenance requirements, cycle or calendar aging as well as their discharging pattern towards the electricity grid that has different characteristics from the respective ones of normal EVs. Consequently, the SoH of the BESS is ignored that may lead to a wrong estimation of their SoC and, probably, to additional failures. This presentation describes appropriate models and tools for achieving an optimized operational strategy of BESS that are used in EVs and charging facilities with photovoltaic systems. This optimization procedure will enable minimal aging and, therefore, minimal replacement costs.</p>		

CV:

Evangelos Dialynas has received the Diploma in electrical engineering from the National Technical University of Athens (NTUA) as well as the Master of Science (MSc) and the Doctor of Philosophy (PhD) degrees from the University of Manchester Institute of Science and Technology (UMIST) in United Kingdom in the area of power systems. He is a Professor in the School of Electrical and Computer Engineering at NTUA. He was the Director of Electric Energy Systems Laboratory for more than ten years as well as he is the Director of the Postgraduate Programme “Energy Production and Management” for more than six years. During his work in NTUA, he has been the lecturer of various courses related to his areas of interest as well as the organiser of five courses that are included in the curriculum of undergraduate and postgraduate studies. He was also a Member of the Board of the Regulatory Authority for Energy in Greece for about three years. His main activities concerned all aspects of the electricity sector including the operation of energy storage systems, the operation of charging facilities for electric vehicles and the electric mobility in general.

He has conducted scientific and applied research that is concentrated in the development of methodologies and computer tools for assessing and evaluating the reliability and security performance as well as the economic operation of electric power systems and interconnections. He has been very active in the various aspects concerning the application of competitive electric energy market, the increased penetration of all types of renewable energy sources into power systems, the development of smart grids and microgrids as well as the impact of electric vehicles and various types of energy storage facilities.

He has been the supervisor of more than one hundred projects conducted by undergraduate and postgraduate students for their diploma dissertations. Additionally, he has been the supervisor of about twenty doctoral students and the scientific coordinator and/or a senior researcher of many research projects in all the areas of power system analysis that have been financed by various companies and organizations. As a result of his teaching and research activities, he has written 3 books, 2 student notes, 2 dissertations, more than 65 papers being published in international technical journals after review, more than 130 papers presented in various international conferences and published in their proceedings as well as more than 120 scientific and technical reports. He has also worked as a consultant for various companies and organisations in Greece and Cyprus in the areas of his interests.

Prof. E. Dialynas is a Distinguished member of CIGRE and the Greek Member of its Administrative Council while he has participated in its activities as a member of various CIGRE Study Committees, Working Groups and Task Forces. He has also been a member of the Administrative Council of the Greek National Committee for CIGRE for more than 25 years and its Chairman for more than four years. He is also a senior member of IEEE and the Chairman of the IEEE Greece Power Chapter. Finally, he is a member of IET.