

15th International Green Energy Conference (IGEC XV) | July 10-13, 2023 | In-person & online

Name	Kodjo Agbossou	
Affiliation	University of Quebec Canada	
<h2 style="color: red;">Invited Keynote Lecture</h2>		
Presentation Title	Opportunities of smart grid and hydrogen production	
Abstract (Approximately 200 words)	<p>The emergence of new technologies, offered by smart grid ecosystems, can help deeply decarbonize future power systems. Renewable energy integration, widespread electrification, and energy efficiency improvements are acknowledged as significant pathways towards achieving deep decarbonization under these developments. The pursuit of decarbonization through these paths requires dealing with their inherent challenges and resulting circumstances. Extensive utilization of Energy Storage Systems (ESSs) is needed to address the issues related to large-scale integration of renewable energy resources due to their intermittent and volatile nature. Among different forms of ESSs, hydrogen technologies can offer energy storage solutions with great opportunities to improve the power grid resilience with substantial renewable energy supplies. Hybrid systems that combine hydrogen with other energy storage devices are regarded as promising assets to such an improvement. This speech focuses on the assessment of some technical aspects of such a transformation and, on academia and industry research activities and efforts for production and storage of hydrogen. We introduce specifically some concepts and provide some examples of energy management. Finally, we give a snapshot of recent research works at UQTR and more specifically at the Hydrogen Research Institute.</p>	
Biographical Sketch (Approximately 200 words)	<p>Kodjo Agbossou, ing., Ph. D., professor. Areas of expertise: Electrical energy generation and storage systems integration, hydrogen production and distribution, distributed energy systems, renewable energy resources, intelligent demand-side management, electronic instrumentation. Prof. Agbossou has a solid expertise in renewable energy resources integration, hydrogen storage systems, intelligent demand-side management, and transactional energy management. Since 2018, he is Hydro-Québec Research Chairholder on Transactive Management of Power and Energy in the Residential sector. Over the years, he has come up with actual contributions towards residential energy management systems. His research work is internationally recognized (his publications take place among the top 10 worldwide citations in the field of renewable energy resources and hydrogen storage integration according to Scopus and SciVal rankings). He has contributed to more than 315 publications, including five patents, 119 refereed papers, and 49 technical reports. Since 1998, he has been awarded several major individual and group research grants. Prof. Agbossou has been in collaboration with the LTE/IREQ of Hydro-Québec for more than 20 years. He has carried out several projects with the LTE/IREQ of Hydro-Québec, Economic Development Agency of Canada, the Office of Energy Efficiency and Innovation (Ministère des Ressources naturelles du Québec), Natural Resources Canada, FRQNT, and NSERC. Prof. Agbossou is also the head of a research group in the UQTR's Hydrogen Research Institute where he conducts research on the distributed generation, renewable energy resources, and load management systems.</p>	