HYDROGEN INFRASTRUCTURE/ENERGY STORAGE
THURSDAY, NOVEMBER 9 - ROOM 103 B, 1:15 PM - 3:15 PM

- **H2@Scale: Technical and Economic Potential of Hydrogen as an Energy Intermediate** - Mark Ruth, NREL
  
  - This presentation will summarize an analysis of the technical potential demand and production options and scenarios developed to understand the economic potential of the concept and its impacts on economic factors, resource use, and emissions.

- **Development of Hydrogen Production Infrastructure - How Big Scale Hydrogen Plants Will Help Developing the Market** - Jose López-Gallego, H2B2 USA, LLC
  
  - Why would an environmentally conscious person buy a hydrogen fuel cell vehicle that generates 10 kg of CO2 per kg of Hydrogen? For a clean source of hydrogen, we need a plant that can produce 100% renewable hydrogen at a competitive cost. For that we need economies of scale and the knowledge to develop, finance, build and operate large industrial and energy complexes.

- **Hydrogen in Volume: It’s Use in ‘Sector Coupling’ the Gas and Electricity Sectors** - Steve Jones, ITM Power Inc.
  
  - This session will discuss the merits of the technology and provide real world evidence to support why large scale energy storage must include hydrogen electrolysis to be successful.

- **Green Hydrogen Enabling Deep Decarbonization** - Monterey Gardiner, BMW Group
  
  - A brief overview of BMW’s Vision of Green Hydrogen for Mobility, covering motivation for low carbon vehicles, and the role ZEVs play towards deep decarbonization by supporting renewable energy integration. A brief status of BMW’s demonstration fleet of fuel cell vehicles will be provided.

- **The Migration to the Hydrogen Economy: The Case of Spain** - Javier Brey, H2B2 Electrolysis
  
  - The European Union member states have begun to establish their strategies for the deployment of an infrastructure that allows the use of hydrogen as an alternative fuel. This paper presents a current and future analysis for the case of Spain, where a gradual transition is taken into consideration.

- **Hydrogen Refueling Stations Providing Grid Services** - Yusheng Luo, Idaho National Laboratory
  
  - In this paper, multiple electrolyzers (250 kW) are coordinated and operated to verify that electrolyzers can provide DR services to large distribution or even transmission level grid, and local power quality support to a single feeder as well.