

Toward Transportation and Energy Systems integration: RE2H Technology

As a promising energy carrier, hydrogen can be used in its pure form as a secondary energy, an industrial raw material and even a type of energy storage with its supply chain, which enables the construction of renewable-dominated power system and zero-emission society in the future. In this talk, the models for water electrolysis-based hydrogen production, pipeline transmission and consumption of fuel-cell hybrid electric vehicles are introduced. Based on these models, the co-benefits of renewable-to-hydrogen can be quantified toward transportation and energy systems integration. In addition, we first propose a marginal hydrogen pricing framework to evaluate the consistency of the prices between hydrogen and electricity markets.