

Mohammad Sadegh Javadi, Amjad Anvari-Moghaddam and Josep M. Guerrero, 2017, Robust energy hub management using information gap decision theory, Annual Conference of the IEEE Industrial Electronics Society (IECON 2017), Beijing.

**Abstract** This paper proposes a robust optimization framework for energy hub management. It is well known that the operation of energy systems can be negatively affected by uncertain parameters, such as stochastic load demand or generation. In this regard, it is of high significance to propose efficient tools in order to deal with uncertainties and to provide reliable operating conditions. On a broader scale, an energy hub includes diverse energy sources for supplying both electrical load and heating/cooling demands with stochastic behaviors. Therefore, this paper utilizes the Information Gap Decision Theory (IGDT) to tackle this uncertainty as an efficient robust optimization tool with low complexity to ensure the optimal operation of the system according to the priorities of the decision maker entity. The proposed optimization framework is also implemented on a benchmark energy hub which includes different energy sources and evaluated under different working conditions.