

The Global Grid

Spyros Chatzivasileiadis (ETH)

June 24, 2011

The research talk will argue that the next probable stage of the electricity network will be a grid that will span the whole planet and connect most of the large power plants in the world: this is the "Global Grid". The main driving force behind the Global Grid will be the harvesting of remote renewable sources and its key infrastructure element the long transmission lines with large capacity. Wind farms and solar power plants will supply load centers with green power over long distances. After introducing the concept, we present the multiple opportunities that emerge from a global electricity network such as the smoothing of renewable energy supply and electricity demand, the reduced need for bulk storage and the reduction in the volatility of the energy prices. We further discuss possible investment mechanisms and operating schemes. Among others, we envision a global power market and the establishment of two new coordinating bodies, the "Global Regulator" and the "Global System Operator".