

# Huawei's Vision for the Energy Internet

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Energy transformation has reached a crossroads. Global primary energy consumption in 2010 was about 550 exajoules, nearly 25 times higher than in 1830 [www.theoil drum.com/node/8936]. Each exajoule is equal to 174 million barrels of oil. Compared with a century ago, we are burning ten times more energy today to support the global production of goods and services. Still, fifteen years into the Millennium, half of the world's population, including 1.2 billion children, lacks adequate access to electricity.

Facing a number of challenging energy issues, such as resource shortages, low efficiency, unbalanced regional development, and environmental pollution, in 2008, the German Federal Ministry of Economics and Technology initiated the "E-Energy: ICT-based Energy System of the Future" project to build a digitally connected, controlled, and monitored energy network. In the same year, the US National Science Foundation Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Center was founded at North Carolina State University to conceptualize a plug-and-play architecture for electric power distribution suitable for renewable energy and energy storage devices. In June 2015, the China National Energy Administration officially released the Energy Internet Action Outline and identified twelve supporting research projects in June 2015. Regardless of the strategy, the Energy Internet is pushing the entire energy industry to "full connectivity."

Among many examples, ICT-equipped Photovoltaic (PV) devices have increased the efficiency of solar power converters by more than three percent. Agile communication networks swiftly adapt to multi-dimensional topology changes over energy networks. Using Big Data technologies, oil companies are improving the success rate for oil exploration, and electric power providers are calculating load predictions and pro-actively preventing accidents.

As is familiar from the transformations of the finance and telecommunications industries, those who embrace the change will become the new industry leaders.

Huawei is working with energy enterprises, providing them with innovative ICT solutions that help the energy industry transform their production modes and explore new business models.▲



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