

FUTURE OF ELECTRICITY HOW INNOVATION & DISRUPTION WILL RESHAPE THE POWER SECTOR

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Abstract

The electric power sector is experiencing fundamental transformations at multiple fronts and at an unprecedented pace as further described in *Future of Utilities: Utilities of the Future*, a 2016 book edited by the speaker.

The most important drivers of change include:

- Rapid uptake of **distributed generation** (DG), notably rooftop solar PVs, coupled with continued improvements in **energy efficiency** resulting in flat or declining electricity consumption;
- Advances in **energy management** that allows more active participation by consumers in how, how much, and when energy is consumed;
- Expected advances in energy storage enabling *consumers* not only to become *prosumers* but usher in the age of *prosumage*;
- Promising developments in **platforms** that allow *prosumers* to engage in **peer-to-peer (P2P) trading**, sharing electrons and storage while integrating load profiles; and
- Advances in building design, notably **zero net energy (ZNE) buildings**, **building integrated PVs** (BIPVs) and **passive buildings** that increasingly allows individual or collections of buildings to operate in a *grid-assisted mode*, increasingly able to balance generation and load to operate as semi-independent microgrids.

This presentation examines the implications of these developments on tariffs, on the incumbents' business models and the challenging role of the regulators and policymakers.