



Vision of the Electricity Networks of the Future: a Utility Perspective

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Outline of the presentation

- **Key Energy Challenges for the Future in Europe**
- **Challenges for Utilities**
- **Electricity Network of the Future**
- **The Smart-Grid Platform**

Key Energy Challenges for the Future in Europe (1/2)

- **Security of Supply.**
- **Massive renewal of Generation Plants:**
 - **600 GW*** expected in the next 20 years.
- **Reduction of the CO₂ content of the kWh.**
- **Increase of Renewables and Nuclear in the energy mix.**

* Source: International Energy Agency

Key Energy Challenges for the Future in Europe (2/2)

- **Higher Energy efficiency** may imply the increase of the electricity demand.
- **Higher solicitation of the Grid** including the interconnections.
- **Reliability** with a lot of intermittent sources.
- **Customers more sensitive to quality, price and environment.**

Challenges for Utilities

Propose to the customers **competitive** offers including:

- The possibility to use Energy from Distributed Generation and Renewables.
- The **Quality of Energy** they need.
- **Energy Efficiency**.

And not forgetting that customers are also citizens!

Contract with local authorities for optimal energy choices

Tomorrow's infrastructures will largely be similar to the huge existing ones!

- Increase of the lifespan of the equipment

But faced to new challenges, to be met by innovation:

- Increase the power flow capabilities
- Flexibility
- Interface with customer (Smart metering, etc...)
- Increased use of electricity (hybrid or electric vehicles,...)

- **Decisions of future investments with strong influence of Regulation and its evolution:**

- **Determining the respective evolution between Network, Central Generation, or Distributed Generation**

Key role for the Network:

- **Providing Market access to Distributed Generation**
- **As a back-up when Distributed Generation defaults**

SmartGrids : An opportunity to prepare the Future

- **A key role for the Networks in the future, as recognized by the Green Paper**
- **Key to success:**
 - Innovation
 - Synergy between regulators, utilities, manufacturers, research organizations
- **EDF strongly supports** the European « Smartgrids platform » initiative as a joint research/industry, public/private partnership