ETSI Workshop

STANDARDS: AN ARCHITECTURE FOR THE SMART GRID

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Richard CHARNAH
• Introduction
• Smart Grid - benefits & issues
• Realising the opportunity

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T&D Europe, Chair of Task Force Smart Grids
T&D EUROPE

• European Association of the Electricity Transmission & Distribution Equipment and Services Industry

• Scope
  - the complete range of products, systems and services
  - for transmission and distribution of electricity at high and medium voltage
  - between the producers and the end users.

• Created in March 2008 by the merger of two European committees, CAPIEL HV and COTREL.
T&D EUROPE

• T&D Europe is a driver for:
  - Advanced solutions and technologies in the field of electricity networks
  - Encouraging an environmentally friendly infrastructure
  - Encouraging an energy- and cost-efficient infrastructure

• Companies represented account for
  - production worth over €25 billion and
  - employ over 200,000 people in Europe
Agenda

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T&D Europe position

- **Deregulation and market roles**
  - Need coordination of fluctuating power generation and consumption in response to market conditions.

- **Investment and planning security**
  - stable conditions, limitation of long-term risks, favourable background for investments
  - Need shared Methodology to evaluate investments to meet EU 20:20:20 Targets

- **Faster implementation of infrastructure development**
  - Planning process should enable the development of renewables
  - T&D Europe supports the EU Commission’s Smart Grids TF

- **Education and training**
  - Emphasise attractiveness of engineering (esp. power/elec)

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The manufacturers are driving evolution towards the Smart Grid

We make the solutions that form the body of the Smart Grid
Smart Grid - benefits & issues

• ETSI & T&D will sign an MoU
  - expected to lead to several lines of cooperation
  - Why do T&D.E & ETSI need to work together?

• European Telecommunications Standards Institute (ETSI)
  - European - ETSI & T&D cover similar geographies (political and cultural areas)
  - Telecommunications - vital, but not sufficient alone for the Smart Grid; T&D equipment also needed
  - Standards: importance of standards now evident in the several industries interested in Smart Grids

• Benefits often discussed
  - but the benefits are spread across many stakeholders
SG Stakeholders

Benefits are spread around the stakeholders
Agenda

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T&D EUROPE engagement with the 20/20/20 targets

- Benefits need to be quantified to enable cost-benefit analysis
- 2009 T&D Europe pre-study: "Quantification of Benefits of T&D-systems with regard to the EU 20/20/20 targets"

- Objectives
  - to provide industry input to the EU
  - a tool to stimulate and guide actions
  - led to a 2 step study

- Multi-disciplinary team
  - from Universities & Technology Institutes
  - from the T&D Europe industrial members
  - methodology developed by the University of Genoa
### Output of T&D Europe study

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<tr>
<th></th>
<th>ENERGY EFFICIENCY</th>
<th>CO₂ REDUCTION</th>
<th>INTEGRATION OF RENEWABLES &amp; DG</th>
<th>STEADY-STATE HARMONIC &amp; DYNAMIC EFFECTS</th>
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<tbody>
<tr>
<td></td>
<td>MWh saved</td>
<td>MTₜe CO₂ avoided</td>
<td>MW integrated</td>
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<td>Replacement/ Refurb. of Power Components</td>
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<td>WAMS/WACS (&amp; Upgrading P&amp;C Devices for Comms.)</td>
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<td>Increase of Voltage Level of the Power Grid</td>
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<td>Power Quality Devices (Distribution Networks)</td>
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<td>HVDC (all types)</td>
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Workshop on “Standards”

- Keep up the Standard of the workshop
- Wave the Standard for Smart Grids
- Develop the Standards for the Smart Grid
Thank You