



The smartness of smart grids

October 6, 2010
(Orientation on the IEA activities delivered by Hans Nilsson on behalf of David Elzinga)

Low-carbon energy technology roadmaps

Framing the Discussion

- IEA Clean Technology Roadmaps
- Smart Grid Roadmap Process
- Workshop objectives



Low-carbon energy technology roadmaps



Why Clean Technology Roadmaps

- Development of new, clean technologies is essential for climate change mitigation
- Market mechanisms – e.g., carbon pricing – are insufficient to deliver needed technology advancements in time
- Energy technology policies are needed to:
 - Address technology-specific barriers
 - Accelerate early deployment
 - Support technology diffusion and knowledge sharing
- Roadmaps provide a structured way to identify technology policy needs



Low-carbon energy technology roadmaps



The IEA roadmap approach

- Engage cross-section of stakeholders
- Identify a baseline – where is technology today?
- Use IEA modeling results to chart a deployment pathway
- Identify barriers – technical, regulatory, policy, financial, public acceptance
- Suggest implementation actions for stakeholders
- Inform national strategy development
- Identify opportunities for international cooperation



Low-carbon energy technology roadmaps



Smart Grid Roadmap Process

Scope:

Demonstrate future electricity system needs and solutions provided through practical development and deployment of the Smart Grid in electricity generation, transmission, distribution and end-use sectors.

Workshops:

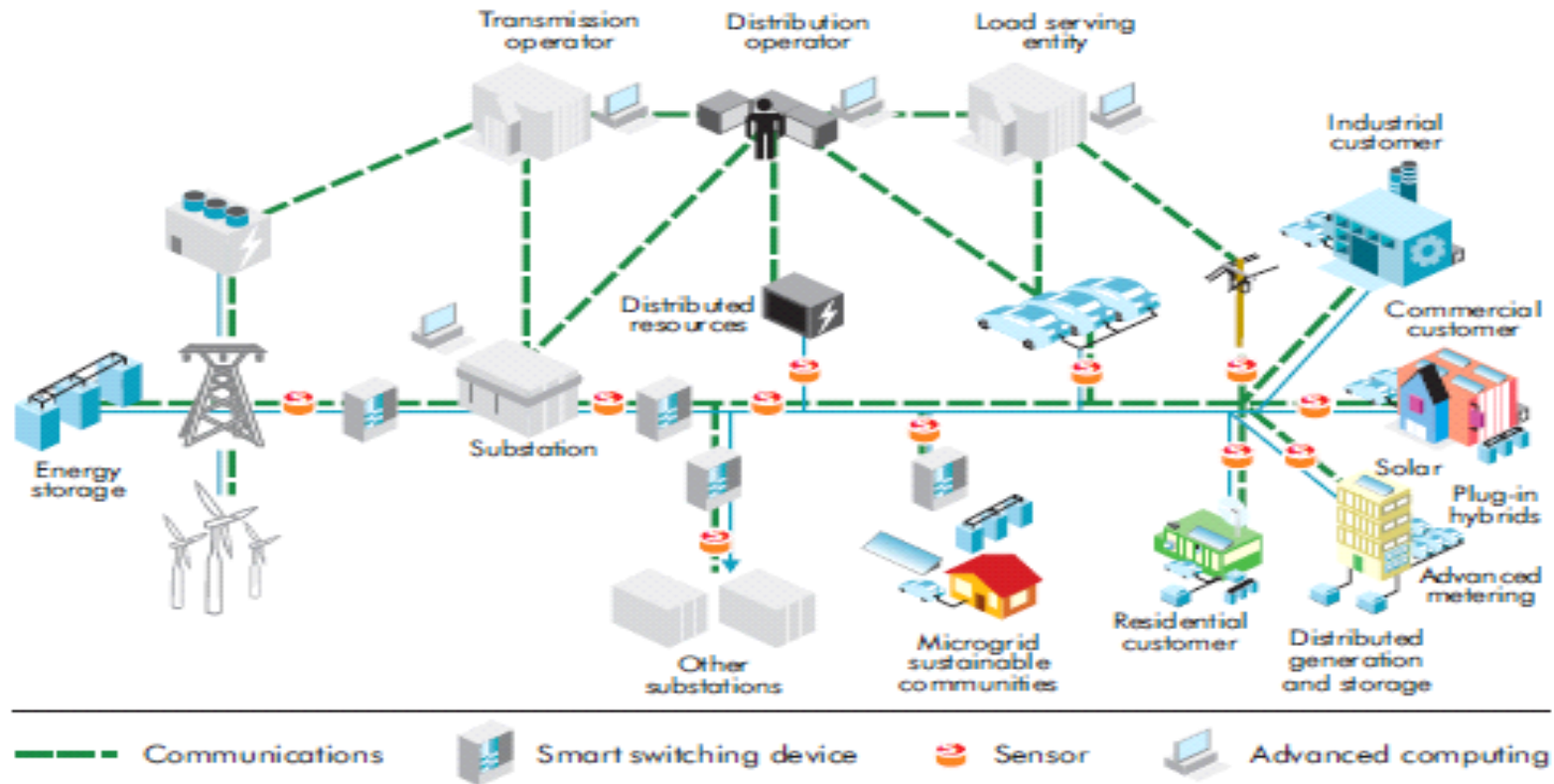
- Participation in IEA Workshops (Policy workshop April 2010, Finance Sept 2010)
- Smart Grid technology RD&D needs (May 2010)
- Roles of Government and Private Sector in Smart Grid RD&D (June 2010)
- Smart Grids – Smart Customer Policy (Sept 2010)
- Regional Assessment of Smart Grid needs (November 8-9, 2010 – Korea)

Targeted Analysis:

- Estimated cost of the Smart Grid
- CO₂ Emission reductions due to Smart Grid deployment
- Recommendations on customer policies to accompany deployment



Elements of Smart Grids



Source: PG&E (2009)



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Workshop Objectives

- Perspective on key issues and barriers facing early deployment of smart grids
- Expert opinion on regulatory, consumer, and market challenges to the smart grid
- Power system-wide considerations and opportunities
- How can the IEA DSM-Programme serve its participants in their work to enhance energy efficiency and what is the role of the smart grids?



- **Welcome to Electrolux, Henrik Sundström**

- **Block 1: Why are smart grids important?**

The IEA secretariat gives a background and overview of the international initiatives

- **Block 2: What does smartness mean – and how can it be achieved? 13.30-16.00**

Electrolux: Tomas Dahlman - Increasing the smartness of homes and home appliances

ABB: Karl Elfstadius - Key drivers and trends within smart grids, incl. a technical outlook - a global view

Fortum: Speaker Tomas Wall - Smart grids for a sustainable city. A case study of Stockholm Royal Sea Port (Djurgårdsstaden)

Ericsson: Speaker Craig Donovan - The communication opportunities in a smart world

Interactive Institute: Speaker Cecilia Katzeff - How to make the customer smart! Key lessons on customer involvement

- **Block3: DSM for smart grids– present and future work. 16.00-16.45** Brief presentations from IEA DSM-Programme

XV: Network Driven DSM, David Crossley, Australia

XVII: Integration of Demand Side Management, Energy Efficiency, Distributed Generation and Renewable Energy Sources, Seppo Kärkkäinen, Finland

XIX: Micro Demand Response and Energy Saving, Linda Hull, United Kingdom

XX: Branding of Energy Efficiency, Balawant Joshi, India

- **Block 4: Are there limitations to the smartness? 16.45-17.30**

Remy Kolessar, Energy Markets Inspectorate Sweden, on the issue of legislation, skill, experience etc.

Speaker from Electrolux Consumer Insight Group

