How Standards help and which ones will win in Energy Efficiency

HEAT10 Conference http://www.cir-strategy.com/events



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International Telecommunication Union

How Standards help and which ones will win in Energy Efficiency

- Where are Standards critical?
- Who is driving them?
- Who is producing them?
- What's the next step?





Power distribution, Smart Meters, Smart Grids



How will Smart Grids increase energy efficiency?

- By giving users (and power generators) more control
- By enabling the introduction of a higher proportion of renewables in the energy mix
- By allowing Electricity Generators to use lower proportion of stand-by capacity
- By enabling deployment of higher proportion of electric vehicles







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Wide range of communications technologies for the Smart Grid

Standards and interoperability are key

Communications technologies

Powerline carrier (PLC)

Broadband over powerline

900 MHz RF mesh Zigbee

WiFi

2.4 GHz mesh wireless

Digital subscriber line (DSL)

Fiber optics

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Example companies that implement it



Smart Metering: identification of key interfaces



EU M/411 Smart Metering Mandate

- European Commission Mandate
 - Issued in March 2009 by DG TREN
 - Sent to the 3 ESOs: CEN, CENELEC and ETSI
- Main objective
 - To develop standards for European smart meters, allowing interoperability and Consumer actual consumption awareness
- Time schedule:
 - December 2009
 - state of the art of existing standards, gap analysis, and first Work Program
 - September 2012
 - Develop new smart metering standards





Why Electric Vehicles?

- Reduced environmental impact
 - Displace half of US oil imports
 - Reduce CO₂ by 20%
 - Reduce urban air pollutants 40%-90%
 - Idle capacity of power grid could supply 70% of energy needs of today's cars and light trucks
 - Batteries in EVs could provide power during peak demand



Why Standards?





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ICT Standards Needed for "Smart Charging"

Parameters impacting battery charging

- Capacity & type of battery
- Standardize battery versus proprietary solution
- Battery reserve
- SLA with a Charging Station supplier
- Maximum time allocated to charge the battery
- ICT standards must provide for
 - Distance & time to the nearest Charging Station considering:
 - Battery reserve
 - EV weight & power
 - Security margin
 - List of Charging Station including:
 - Price versus charging time
 - Your SLA membership with the best offer versus your requirements
 - Public transport or share transport from the selected Charging Station to end destination.

V2G Requires Many Standards



EU M/468 Electric Vehicle Charging Mandate

- European Commission Mandate
 - Issued in June 2010
 - Sent to the 3 ESOs: CEN, CENELEC and ETSI
- Main objective
 - To develop standards for interoperability of Electric Vehicle charging including safety and EMC aspects
- Time schedule:
 - May 2011
 - Full Work Program for standards to be developed
 - March 2012
 - Adoption of standards



Simate





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