



SET Plan Conference 2009

Parallel session SMART GRIDS

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SMART GRIDS

- **The road-map for the European Electricity Grid**
 - Key characteristics
 - Governance
 - Key strengths
 - Weaknesses and recommendations
- **Recommendations for further development of the European Electricity Grid road-map**
 - Scope
 - E-demand and new non RES
 - Financing sources and conditions

The European Electricity Grid road-map

- Key characteristics
 - Covering all issues
 - technical
 - market design
 - organisation & data exchange
 - Regulations

Smart Grids Model

SMART GRIDS
Functional level

Level 5: Smart Customers

Customers aware and actively participating

Level 4: Smart Energy Management

Management of end-use energy efficiency, aggregation, retail

Level 3: Smart Integration

Renewable energy, DG, electric vehicles, electricity storage and aggregation

Level 2: Smart network and processes

More automated MV distribution networks with self healing capabilities.

Monitored and controlled LV networks

IT supported monitoring process

Level 1: Smart Pan-European Transmission network

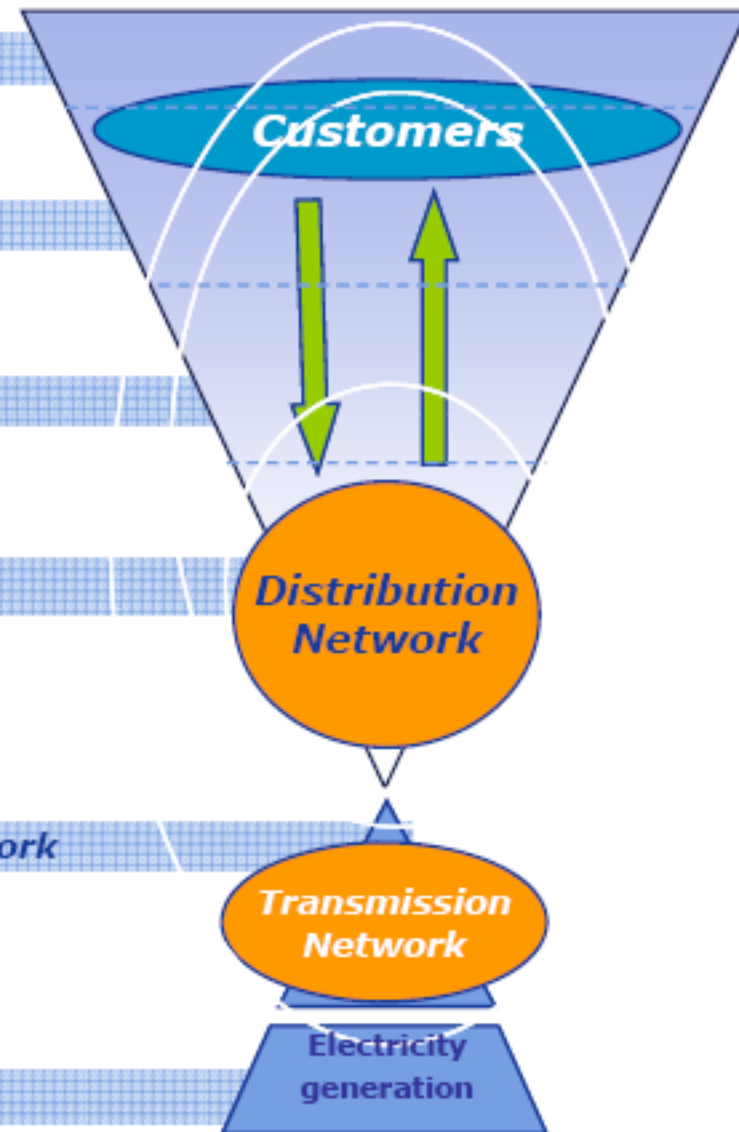
Innovative transmission grid architectures

State-of-the-art transmission/power technologies

Novel monitoring, control and storage methodologies

Shared electricity market simulators

Level 0: New generation technologies



The European Electricity Grid road-map

- Governance
 - Impressive work (speed and quality) of the 14 system operators involved
 - Cooperation TSO's; DSO's and regulators
 - Open to (all) other stakeholders

The European Electricity Grid road-map

- Key strengths to build upon
 - Smart Grids ≠ goal in itself
 - Roadmap based on EU energy policy goals
 - Roadmap based on ‘what needs to be done’

The European Electricity Grid road-map

- Weaknesses
 - Scope: deployment and R&D on hardware and ICT excluded
 - Assumption on electricity demand?
 - Relation with EU energy policy OK, but what to do with market initiatives for new non RES generation?

Recommendations further development European Electricity Grid road-map

- Scope
 - Deployment is excluded:
 - Coherence with other EII's?
 - To be addressed with the same key players (SO's, Regulators, MS')
 - How to open up area's with large RE resources?
 - R&D on hardware is excluded:
 - Σ roadmaps covers overall R&D aim of the SET-Plan?

Recommendations further development European Electricity Grid road-map

- E-demand & new non RES
 - Relation to EU energy policy OK, but:
 - Electricity demand up or down?
 - decreasing by EE measures in existing functions
 - increasing by shifts to electrification (i.e. EM)
 - How to deal with new non RES market initiatives?
 - Ambition in line with other EII's?
(planning and volume)

Recommendations further development European Electricity Grid road-map

- Financing sources and conditions
 - Financing of the required 2 bn. €:
public funds (EC+MS') & tariffs
 - Regulations:
 - existing regulations aimed at low costs for
end users
 - sustainability to be added

(regulators already actively contributing)