ADSM in Spain. Results from GAD Project. Aims, Developments and ongoing results

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Aims and Expected Impact

• Aims
  – Active Demand Side management using smart devices with embedded system approach. These devices allow the load curve lamination and the reduction of the electric demand.

• Expected Impact in Electrical System
  – Infrastructures optimization
  – Improvement of security of supply
  – Development of end user awareness on the generation costs on peak demand periods
  – Reduction of Green House Effect gases emissions
  – Development of national industry capacities related to smart grids and smart metering.

• GAD project
  – 23 M€
  – 4 years term (2007 a 2010)
  – Funded by program CENIT 2007 of CDTI
Background

- Load curve of Spanish Electrical System (Source: www.ree.es). Maximum hourly average power demand (14/01/2009)

There’s a need of optimising the load curve, transferring consumption from peak periods to valley periods.
Consortium

- Utilities (2 DSO, 1 TSO)
- Control Systems Integrators
- Meter manufacturers
- Appliances manufacturers
- Home automation solutions integrators
- Systems and SW engineering
- Communication equipment manufacturer
- 14 R&D Institutions
Agents Involved
Agents Involved. Benefits

• TSO Benefits
  – Quality and reliability improvement
  – Reducing and postponing the need of new generation and grid infrastructures
  – Integration of an increasing amount of non manageable renewable generation
  – Technical losses reduction
  – Contribution to the climate change mitigation

• DSO Benefits
  • Same as TSO +
  • More visibility at low voltage grid
  • Increase the quality of supply
Agents Involved. Benefits

• Retailer Benefits
  - Product differentiation
  - Quality of service
GAD IMPLEMENTATION PROPOSAL
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- Architecture of devices at customer home

Diagram showing the in-home electrical network, including light lines, ovens, stoves, microwaves, bathrooms, kitchens, dishwashers, washing machines, boilers, and sockets.
GAD IMPLEMENTATION PROPOSAL

• Pilot for technological test. Location: ITE

- ECST
- ECCT
- DCONTA
- DPM(DCCA)
- DIFU
- Smart Appliances
- Smart Plugs
NEXT STEPS

• Standardization of protocols

• Evaluation of Demand side management resource

• New legislation to promote demand side management.

• New tariffs.

• Customer awareness.
Questions?

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