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CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

IMPLEMENTATION OF ARTICLE 9 OF EED Roll-out of electricity Smart meters in Spain.

María Jiménez Navarro

Ass. Deputy D.G. for Electricity

MINISTRY OF INDUSTRY, ENERGY AND TOURISM

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SMART METERS IN SPAIN. INDEX



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- **ROLL-OUT OF SMART METERS IN SPAIN:**
State of the art.
Functionalities.
- **HOURLY BILLING: VOLUNTARY PRICE FOR SMALL CONSUMERS.**
- **DEMAND SIDE MANAGEMENT AND SMART METERS.**

SMART METERS IN SPAIN



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APPLICABLE LEGISLATION

Directive 2006/32/CE of 5 April 2006 *Member States shall ensure that final customers are provided with meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use.*

Royal Decree 1110/2007, of 24 August 2007

All household electricity meters shall be smart meters. It defines the functionalities of the smart meter's system.

2006

2007

Royal Decree 809/2006, of 1 July 2006

Since 1 July 2007, new electricity meters for customers of a contracted capacity below 15 kW, shall allow differentiation of consumption in different time periods and remote management.

Ministerial Order ITC/3860/2007, of 28 December.

Establishes the roll-out plan of remote managed electricity meters (Smart meters). 100% of household electricity Smart meters to be deployed before 31 December 2018

SMART METERS IN SPAIN



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APPLICABLE LEGISLATION

Directive 2009/72/CE, of 13 July, on common rules for **the internal market in electricity**

Member States shall ensure the implementation of intelligent metering systems may be subject to an economic assessment before 3 September 2012. Subject to that assessment, Member States shall prepare a timetable with a target of up to 10 years for the implementation of intelligent metering systems.

Directive 2012/27/UE, of 25 October 2012, **on Energy Efficiency**

MS shall ensure that final customers for electricity are provided with competitively priced individual meters that accurately reflect the final customer's actual energy consumption and that provide information on actual time of use.

2009

M. Order IET/290/2012, 16 February, modifies the milestones of the Smart meter roll-out plan :

35% before 31 December 2014

35% before 31 December 2016

Remaining 30% before 31 Dec 2018

2012

Commission Recommendation 2012/148/EU on preparations for the roll-out of smart metering systems

10 common and minimum functional requirements for Smart metering systems.

SMART METERS IN SPAIN



Functionalities of household electricity meters:

- ✓ *Registers for different time periods.*
- ✓ *6 time periods to be programmed. For each of them: registers of active and reactive energy, maximum demanded power every 15' (including its date and hour).*
- ✓ *Capacity to programme registration periods of a **maximum interval of 1 hour (not less)**.*
- ✓ *Integrated in remote management and remote metering system.*
- ✓ *Power control elements.*
- ✓ *Quality register: number and duration of shortages and out-of-limits voltage.*

SMART METERS IN SPAIN



Functionalities of remote management system:

- ✓ *Remote reading of active and reactive energy, and power.*
- ✓ *Remote Reading of quality parameters.*
- ✓ *Remote parameter setting of Metering equipment.*
- ✓ *Activation of power control mode: maxímeter or power control device.*
- ✓ *Remote periodic synchronization with the system.*
- ✓ *Power remote control: supply interruption and re-connection.*
- ✓ *Load management capacity. Reduction of demand in critical situations.*

SMART METERS IN SPAIN



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KEY ISSUES:

✓ *DATA PROTECTION, PRIVACY AND SECURITY:*

Carrying out the Data Protection Impact Assessment

✓ *HEALTH PROTECTION*

SMART METERS IN SPAIN



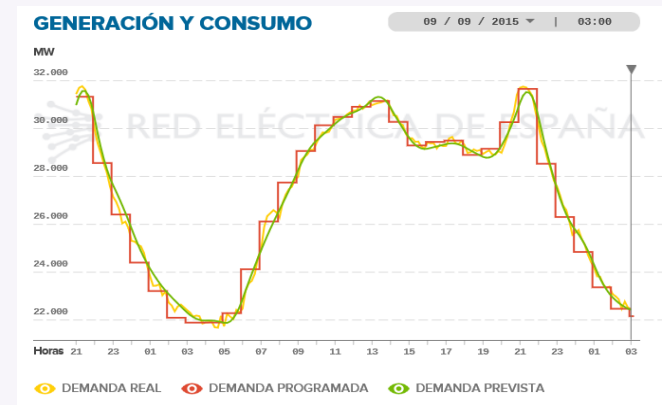
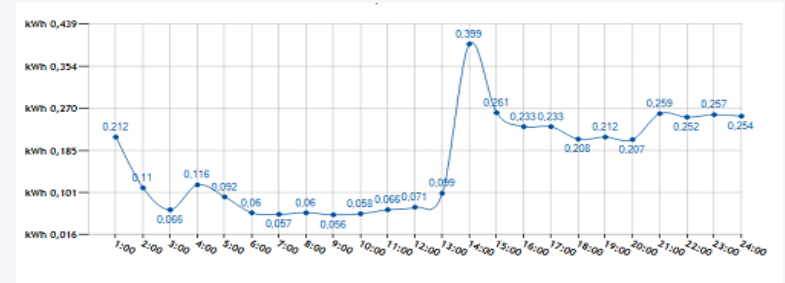
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CASE STUDY: VOLUNTARY PRICE FOR SMALL CONSUMERS

**HOURLY CONSUMPTION REGISTERS
and Remote Reading**



HOURLY MARKET PRICES



**“Hourly Billing” (both consumption and Price)
Hourly Self-consumption**

SMART METERS IN SPAIN



VOLUNTARY PRICE FOR SMALL CONSUMERS (PVPC)

- ✓ ***PVPC is calculated considering:***
 - ***Hourly spot market prices***
 - ***Ancillary and balancing services***
 - ***Other costs associated to electricity supply***

- ✓ ***Billing based on actual consumption:***
 - a) Final consumers with Smart meters effectively integrated in remote management systems: actual hourly registered consumption.***

 - b) Other consumers: actual registered consumption affected with a standard load profile according to time-of-use periods.***

SOME REFLECTIONS linked to DEMAND SIDE RESPONSE.



- ✓ *Billing based on hourly prices and consumption (“HOURLY BILLING”) is at the front of demand side response measures.*
- ✓ *Potential savings in household electricity consumers are limited. We propose to start with projects for intensive or big electricity consumers.*
- ✓ *Need of an ex – ante analysis of consumption patterns and habits to detect the potential for savings. CBA.*
- ✓ *NO need to introduce meter functionalities far beyond the state-of-play of the electricity markets: limited meter’s lifetime (around 15 years) and hourly electricity markets.*

THE PROCESS SHOULD BE GRADUAL.

Thank you for your attention



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MARÍA JIMÉNEZ NAVARRO

Ass. Deputy D.G. for Electricity.
MINISTRY OF INDUSTRY, ENERGY AND TOURISM

Pº CASTELLANA, 160
28071 MADRID. SPAIN

Tel: +34 91 349 74 86

Web: www.minetur.es

Email: mjimenezn@minetur.es

