3rd CA EED – Bucharest, October 2018

CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

USMARTCONSUMER Project conclusions

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About USmartConsumer project

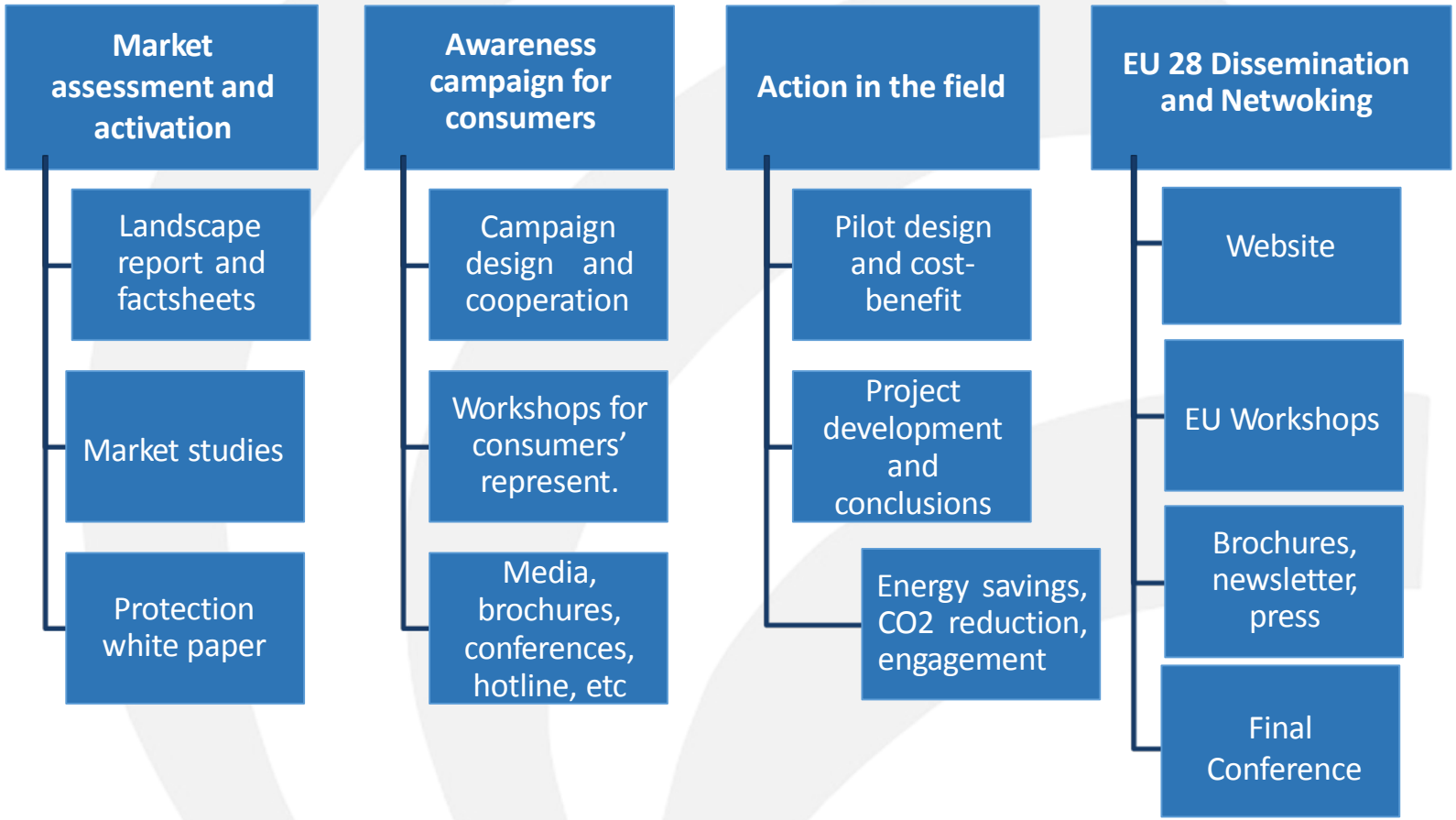
The USmartConsumer project is aimed at both:

- empowering European consumers to use their own smart meter information, supporting them to save energy and being aware on where they consume the energy
- supporting the market in taking decisions by understanding the consumer interests, the exchange of knowledge and advising on actions in the field

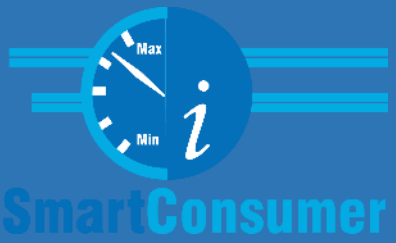
Target groups

- Consumers and consumer representatives
- Utilities and smart metering information providers
- Public bodies
- Regulators

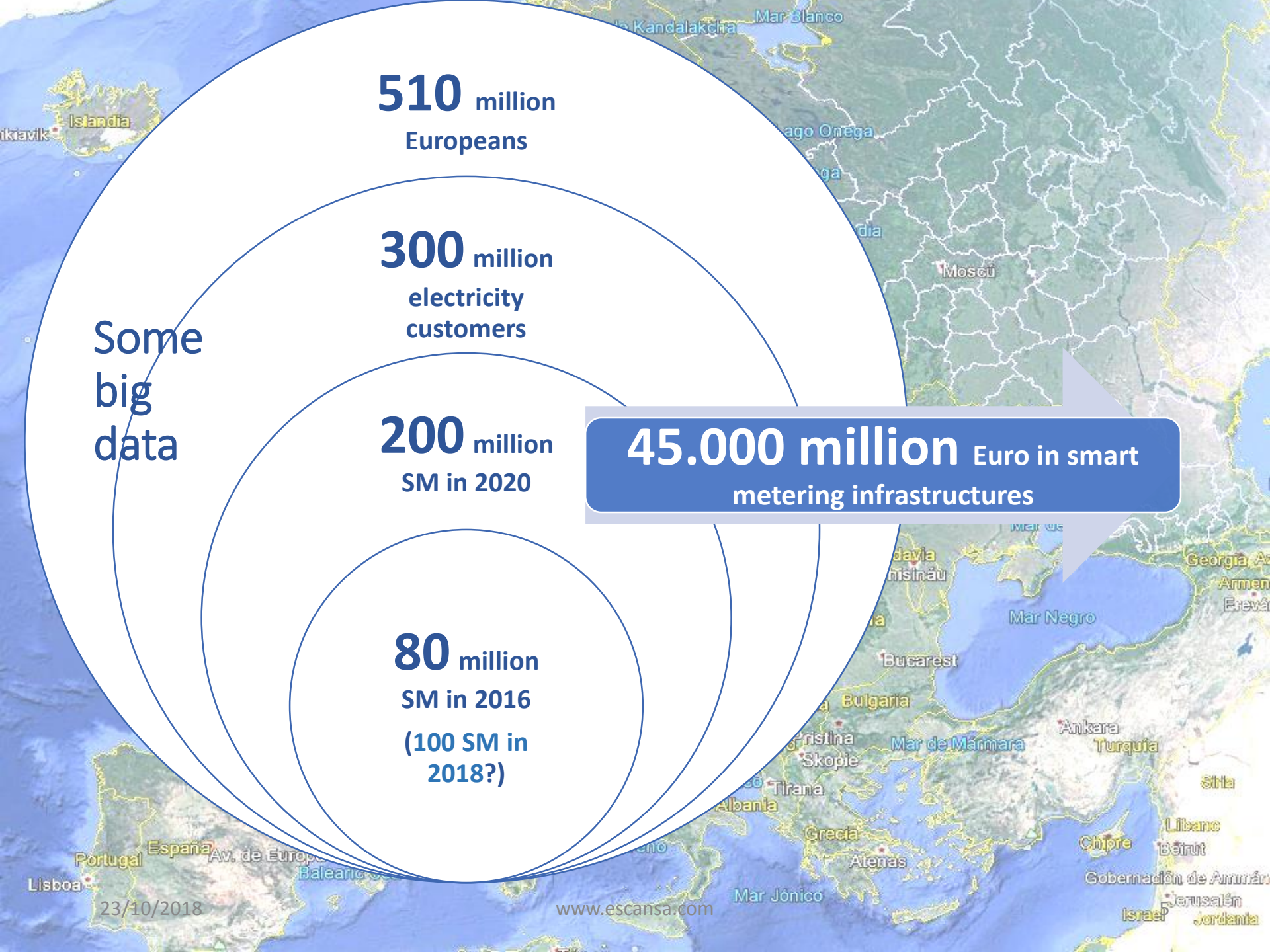
Activities



March 2014 - February 2017



1. Market assessment and activation


Some big data
510 million Europeans
300 million electricity customers
200 million SM in 2020
80 million SM in 2016
(100 SM in 2018?)
45.000 million Euro in smart metering infrastructures
Islandia
Mar Blanco
Moscú
Mar Negro
Bucarest
Bulgaria
Ankara
Turquía
Mar de Mármara
Skopie
Tirana
Albania
Grecia
Atenas
Chipre
Beirut
Líbano
Siria
Mar Jónico
Portugal
España
Lisboa
Israel
Jordania

EU SM Landscape Report Content overview

- Smart meter rollout in 28 EU countries plus Norway as to September 2016, **considering the number of equipment and metering infrastructure to provide value to consumers**
- Authors: a group of expert independent organizations, partners of the USmartConsumer project, coordinated by Escan energy consulting
- Methodology: market survey, interviews to key actors, other EU and national projects, other literature

Available:
www.usmartconsumer.eu

EU SM Landscape Report Chapters

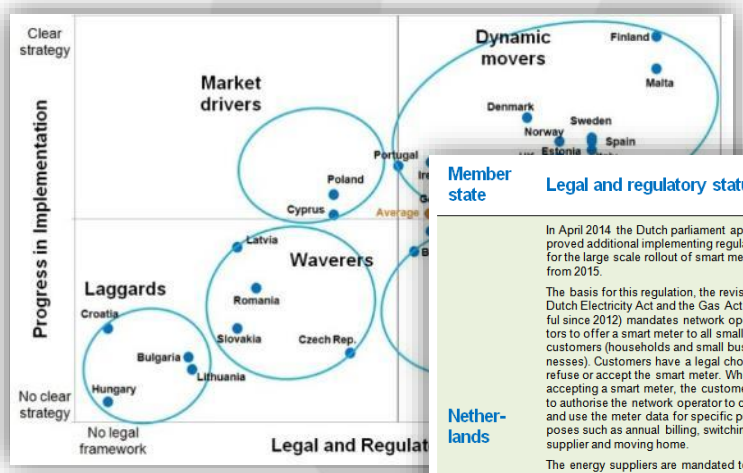
EU 28 countries + Norway :

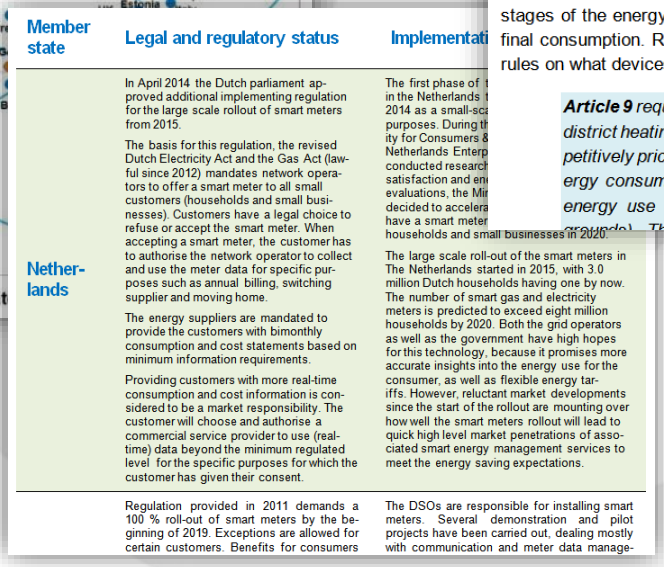
Map of regulatory and market progress

The legal & implementation table per country

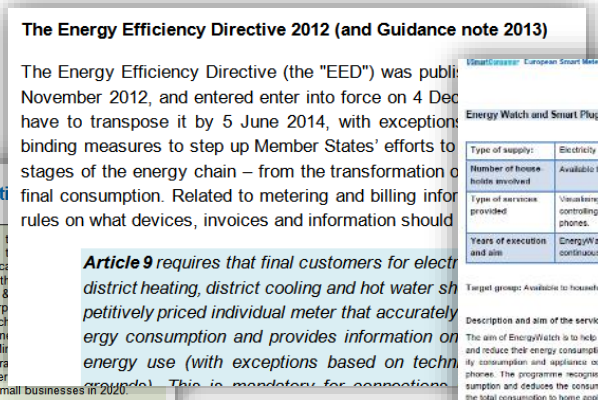
The European Legal Framework

European Smart metering services for consumers





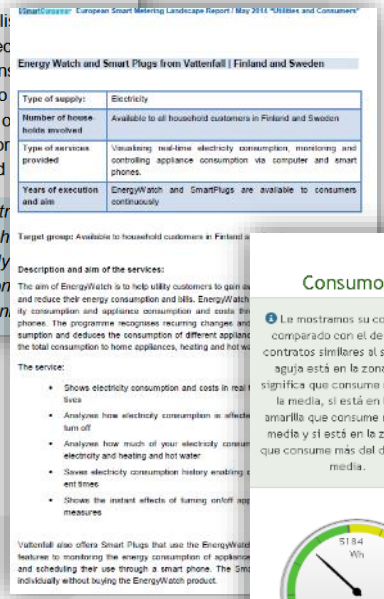
Member state	Legal and regulatory status	Implementati
Nether-lands	In April 2014 the Dutch parliament approved additional implementing regulation for the large scale rollout of smart meters from 2015. The basis for this regulation, the revised Dutch Electricity Act and the Gas Act (lawful since 2012) mandates network operators to offer a smart meter to all small customers (households and small businesses). Customers have a legal choice to refuse or accept the smart meter. When accepting a smart meter, the customer has to authorise the network operator to collect and use the meter data for specific purposes such as annual billing, switching supplier and moving home. The energy suppliers are mandated to provide the customers with bimonthly consumption and cost statements based on minimum information requirements. Providing customers with more real-time consumption and cost information is considered to be a market responsibility. The customer will choose and authorise a commercial service provider to use (real-time) data beyond the minimum regulated level for the specific purposes for which the customer has given their consent.	The first phase of t in the Netherlands t 2014 as a small-sca purposes. During th ity for Consumers & Netherlands Enterp conducted research satisfaction and en evaluations, the Mir decided to accelera have a smart meter households and small businesses in 2020. The large scale roll-out of the smart meters in The Netherlands started in 2015, with 3.0 million Dutch households having one by now. The number of smart gas and electricity meters is predicted to exceed eight million households by 2020. Both the grid operators as well as the government have high hopes for this technology, because it promises more accurate insights into the energy use for the consumer, as well as flexible energy tariffs. However, reluctant market developments since the start of the rollout are mounting over how well the smart meters rollout will lead to quick high level market penetrations of associated smart energy management services to meet the energy saving expectations.
	Regulation provided in 2011 demands a 100 % roll-out of smart meters by the beginning of 2019. Exceptions are allowed for certain customers. Benefits for consumers	The DSOs are responsible for installing smart meters. Several demonstration and pilot projects have been carried out, dealing mostly with communication and meter data manage-

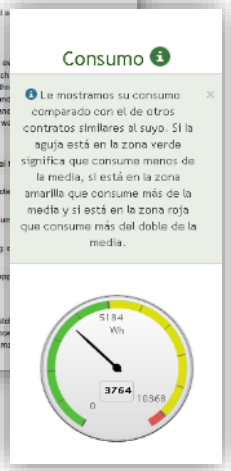


The Energy Efficiency Directive 2012 (and Guidance note 2013)

The Energy Efficiency Directive (the "EED") was publi
November 2012, and entered enter into force on 4 Dec
have to transpose it by 5 June 2014, with exception
binding measures to step up Member States' efforts to
stages of the energy chain – from the transformation o
final consumption. Related to metering and billing infor
rules on what devices, invoices and information should

Article 9 *requires that final customers for electr
district heating, district cooling and hot water sh
petitively priced individual meter that accurately
ergy consumption and provides information on
energy use (with exceptions based on techn*





The European Map

Axis X: Legal and regulatory status:

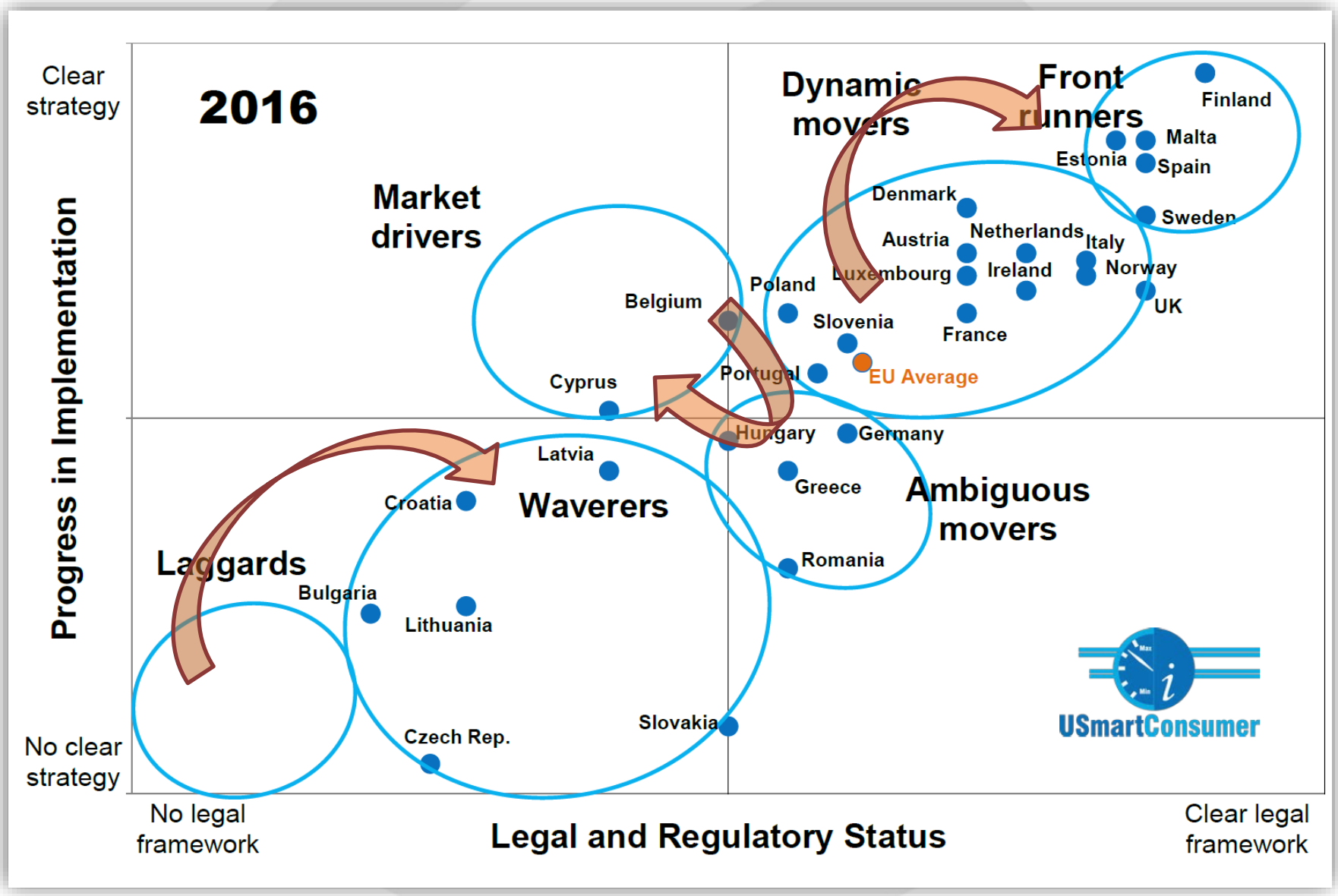
- Whether or not there is a legal framework providing guidelines to utilities for installing smart metering and whether this supports the goal of achieving energy savings and/or demand response for consumers
- To classify each country the status quo has been assessed on the following dimensions:
  - cost benefit report existing or not
  - rollout plan existing and timeline for the rollout
  - additional legislation and regulation on privacy and data protection, meters calibrating
  - Existing minimum functional requirements for consumer smart meter services

The European Map

Axis Y: Progress in smart metering market implementation

- The **number of smart meters and services to consumers** existing, and also to the progress towards a clear and realistic implementation roadmap for metering technologies that enable new services to benefit consumers
- To classify each country the status quo has been assessed on the following dimensions:
  - **enabling infrastructure** to manage data for different purposes and market actors,
  - **smart metering rollout status in %** of electricity customers,
  - **number of services based on smart meter data already available to customers**;

The European Map



The national smart metering rollouts table

Member state	Legal and regulatory status	Implementation status
Romania	Romania presented a positive CBA. In December 2013 was approved the ANRE Order no. 91/2013 on the implementation of smart metering systems for electricity. ANRE is the regulatory agency responsible for the legislation in the energy sector. In compliance with the Order No. 91/2013 (the "Order"), the intelligent electricity measurement systems are electronic systems measuring electricity consumption, ensuring the secure two-directional transmission of information to the end consumer, providing more information than a conventional meter, using electronic means of communication and include the following: • measurement subsystems containing at least the meter, the measurement transformers and the equipment for secure access to the meter; • subsystems for information transmission; • subsystems for the management of information contained by meters;	The distribution networks in Romania were splitted into 8 subsidiaries administrated by Electrica, the nation-wide distribution company; 5 of the 8 distribution subsidiaries were privatized, with over 50% of that participation coming from 3 foreign companies (ENEL-Italy, EoN-Germany and CEZ-Czech Republic). In 2014, the DSOs implement new pilot projects previously endorsed by ANRE, to establish the conditions for intelligent measurement systems and in order to evaluate the implementation plans for 2015-2020. The target is to reach 80% of end consumers (9 million) until 2020. At the end of 2013. EoN had already installed about 36,900 smart meters A local Romanian subsidiary of ENEL installed smart meters for more than 30,000 clients by 2015. Enel is said to have plans to install similar meters for all 2.7 million clients in Romania, paving the way for larger smart cities and infrastructure.

The European legal framework

Energy Efficiency Directive Art. 9-10-11-12

The Energy Efficiency Directive 2012 (and Guidance note 2013)

The Energy Efficiency Directive (the "EED") was published in the Official Journal on 14 November 2012, and entered enter into force on 4 December 2012. Member States will have to transpose it by 5 June 2014, with exceptions. The EED puts forward legally binding measures to step up Member States' efforts to use energy more efficiently at all stages of the energy chain – from the transformation of energy and its distribution to its final consumption. Related to metering and billing information, Articles 9-11 provide the rules on what devices, invoices and information should be provided to end-users.

> ***Article 9** requires that final customers for electricity, natural gas, district heating, district cooling and hot water should have a competitively priced individual meter that accurately reflects their energy consumption and provides information on the time of their energy use (with exceptions based on technical and financial grounds). This is mandatory for connections in a new building and in major renovations.*

The provisions of the EED on metering and billing information take over and make more effective some of the provisions of the earlier Directive 2006/32/EC on energy end-use

The European legal framework

The Third Energy Package (Directives: 2009/72/EC and 2009/73/EC)

The Third Energy Package (Directives: 2009/72/EC and 2009/73/EC)

Member States are required to ensure the implementation of smart metering under EU energy market legislation in the Third Energy Package. This implementation may be subject to a long-term cost-benefit analysis (CBA). In cases where the CBA is positive, there is a roll-out target of at least 80% market penetration for electricity by 2020.

The Directives on the Internal Market for Electricity and Gas (Directives 2009/72/EC and 2009/73/EC) require Member States to ensure the implementation of intelligent metering systems to assist the active participation of consumers in the electricity and gas supply markets.

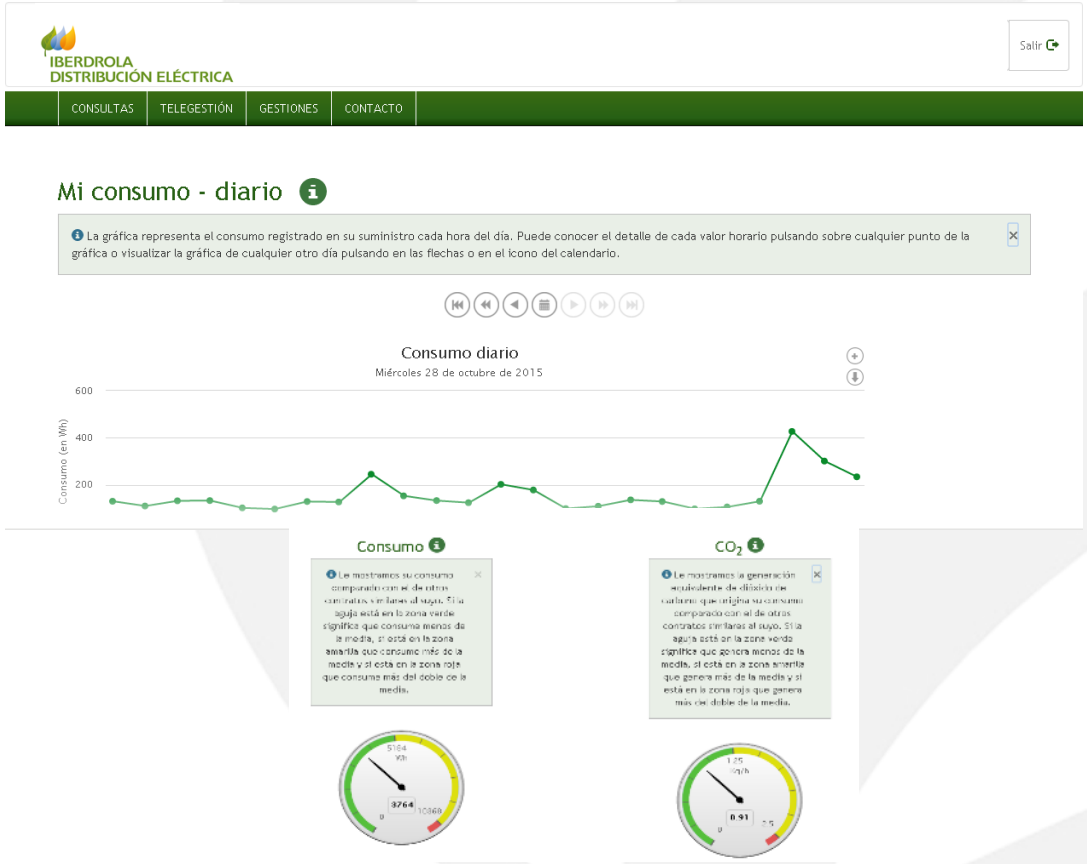
As regards electricity, where an economic assessment of the long-term costs and benefits has been made, at least 80% of those consumers who have been assessed positively have to be equipped with intelligent metering systems for electricity by 2020. Where no economic assessment of the long-term costs and benefits is made, at least 80 % of all consumers have to be equipped with intelligent metering systems by 2020 (Annex I(2) of the Electricity Directive).

As regards natural gas, no deadline is given but the preparation of a timetable is required,

Smart metering services to consumers

Frequent information to consumer and feedback

Awareness, continuous improvement, analytics



Source: Enerbyte

Smart metering services to consumers

Real time information to consumer and feedback

Watch and react immediately

Toon® - Eneco

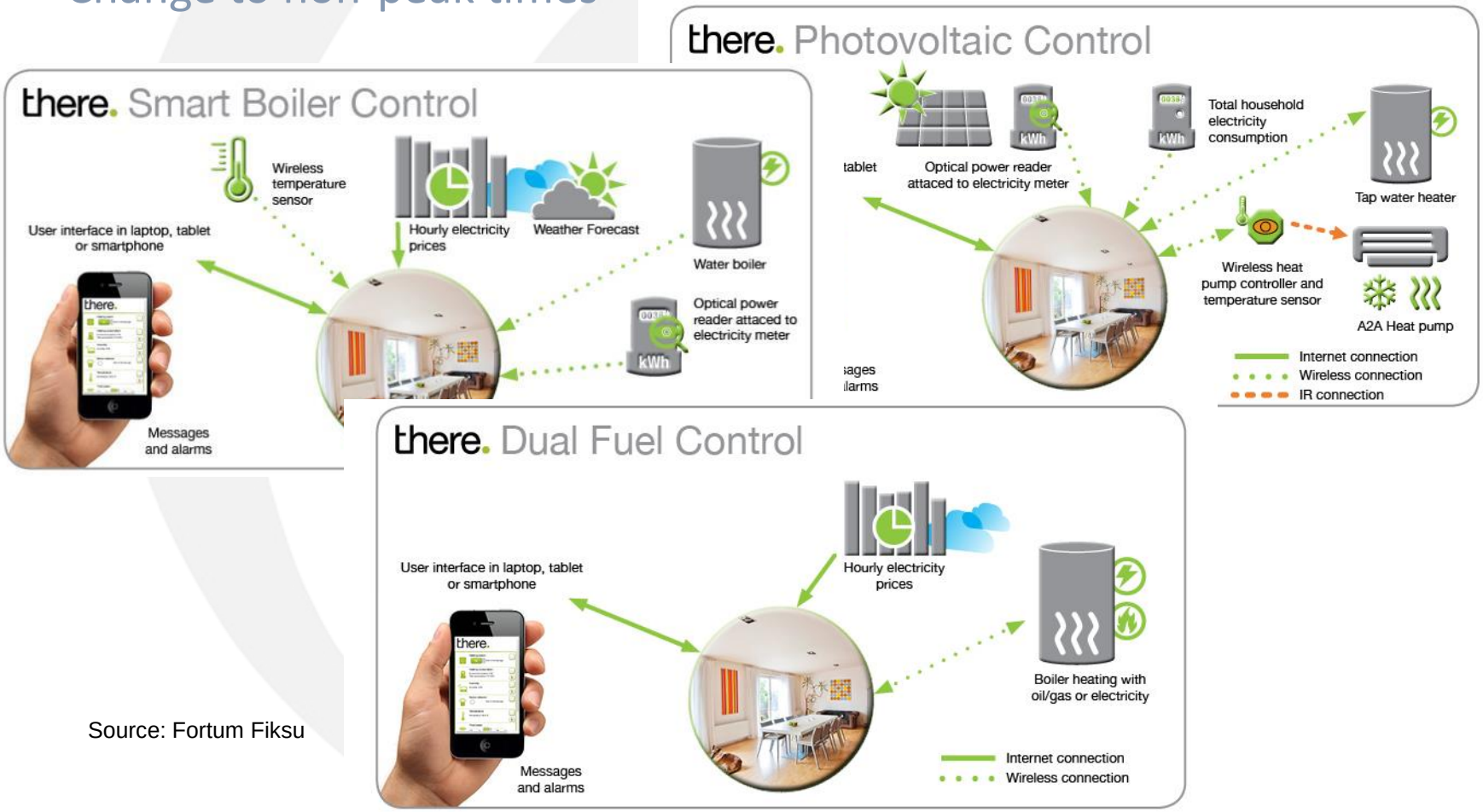
Enelogic P1 – Enelogic

Smile P1 – Plugwise

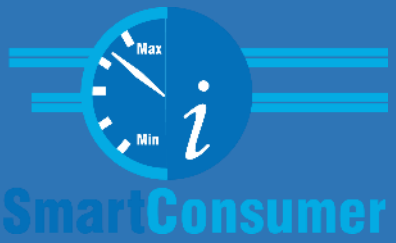
Smart metering services to consumers

Demand response

Change to non-peak times



Source: Fortum Fiksu



2. Awareness campaigns for consumers

Awareness campaigns to consumers

A national or regional campaign for consumers in each partner country (supported by consumer organizations)

Training Workshops

Articles, Press

EnergyNews

¿Quiere anunciarse?

Un estudio desvela qué percepción tienen los consumidores sobre los contadores inteligentes

Publicado el 10/07/2014

La instalación de medidores inteligentes supone un salto tecnológico sin precedentes en los sistemas de medición y facturación de las empresas eléctricas y requiere de un análisis profundo, como el conocimiento de los beneficios que aportan simultáneamente a las empresas energéticas al consumidor final. La consultora Escan ha realizado un estudio de estos aparatos digitales.

La consultora energética Escan ha realizado un estudio par conocer qué imagen tienen actualmente los consumidores de los medidores inteligentes. Este análisis se enmarca dentro d proyecto USmartConsumer, que tiene como objetivo logra el beneficio mutuo de empresas energéticas y consumidores,

analizando y ofreciendo soluciones a los retos que supone este importante cambio.

Resultados del estudio

El conocimiento de la percepción actual del nuevo medidor inteligente por parte de las familias y

Posters, Brochures…

Sähkölasku hallintaan

Hyödynnä etäluettavan sähkömittarisi mahdollisuudet

- Etäluettava mittari mittaa sähkönkulutuksen tunneittain ja luetaan automaattisesti kerran vuorokaudessa
- Laskutus perustuu todelliseen kulutukseen – ei enää arvio- ja tasauslaskuja
- Voit nähdä kulutuksesi tunnin tarkkuudella sähkönsiirto- tai myyntiyhtiösi internetsivujen kautta
- Mahdollisuus ostaa tuntihinnoiteltua sähköä ja hyötyä edullisimmista tunneista
- Tarjolla lisäpalveluita mm. reaaliaikaisen ja laitekohtaisen kulutustiedon saamiseen sekä kulutuksen ohjaukseen edullisimpiin tunteihin
- Mittarit mahdollistavat älykkään sähköverkon palveluita, kuten reaaliaikaisen tiedon sähköverkon tilasta ja nopeammat sähkökatkojen korjaukset

Vinkkejä sähkönkulutuksen seurantaan ja älykkäisiin ratkaisuihin:

www.kesto.fi/alykaskoti

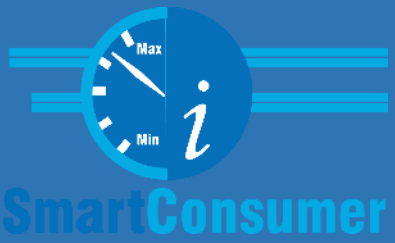
USmartConsumer

Co-funded by the Intelligent Energy Europe Programme of the European Union

KESKI-SUOMEN ENERGIATOIMISTO Central Finland Energy Agency

Conferences

Social networks and emails



3. Action in the field

Action in the field / Energy Saving impact

Example of action in the field in Spain

- ✓ Based on a DSO web-based platform for consumers
- ✓ Consumers are trained on both on the platform use and energy efficiency measures at home
- ✓ 1 year-round project
- ✓ Monitoring and conclusions with support from UJI University

Action in the field / Energy Saving impact

Example of action in the field in Spain

Quantitative results

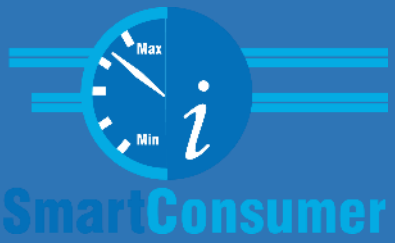
- ✓ Energy savings in 72.000 homes roughly 12.000 MWh
- ✓ CO2 reduction 4.000 tCO2.
- ✓ Average savings per home +160 kWh/year, **5%** of electricity consumption
- ✓ This values are consistent with the pilots assessed in other countries, with **average values of 2% to 5%** energy savings.

Action in the field / Energy Saving impact

Example of action in the field in Spain

Qualitative results

- ✓ **The platform (service) is used by 60% more consumers** after the action
- ✓ **89% finds the platform attactive**
- ✓ **55% consumer changed** their behavior
- ✓ **34% have changed the time of use** of electric devices and appliances
- ✓ **49% have installed energy efficiency** measures
- ✓ A guide on how to use the platform was suggested by 53% of consumers



4. EU Communication

European Utility Week

6 - 8 November 2018
Vienna, Austria

HOME | PROGRAMME | EXHIBITION | ABOUT EUW | ATTEND | COMMUNITY | CLARION EVENTS | I WANT TO REGISTER | MAKE A STAND ENQUIRY

06 Nov 2018 | 07 Nov 2018 | 08 Nov 2018

Digitalisation - theatre 1

at

Smart Metering

14:00 - 14:10
Chairperson's Introduction
Hub Theatre 1
Chairperson
Francisco Puente, Manager - Escan

Smart Metering

14:10 - 14:30
(presentation title announced soon)
Hub Theatre 1
Speakers
Representative of ENEL

Smart Metering

14:30 - 14:50
Zero-touch commissioning of Smart Metering
Hub Theatre 1
Speakers
Marc Gebert, Senior Director, IoT Business Development - NXP

Smart Metering

14:50 - 15:10
(presentation title announced soon)
Hub Theatre 1
Speakers
Iñigo Larumbe Cabanas, Global Smart Metering Coordinator - Iberdrola

..... And our Final USmartConsumer presentations available:
www.usmartconsumer.eu

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