

Redes inteligentes y el futuro de los mercados de energía en el Mediterráneo

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Redes Inteligentes (RI)

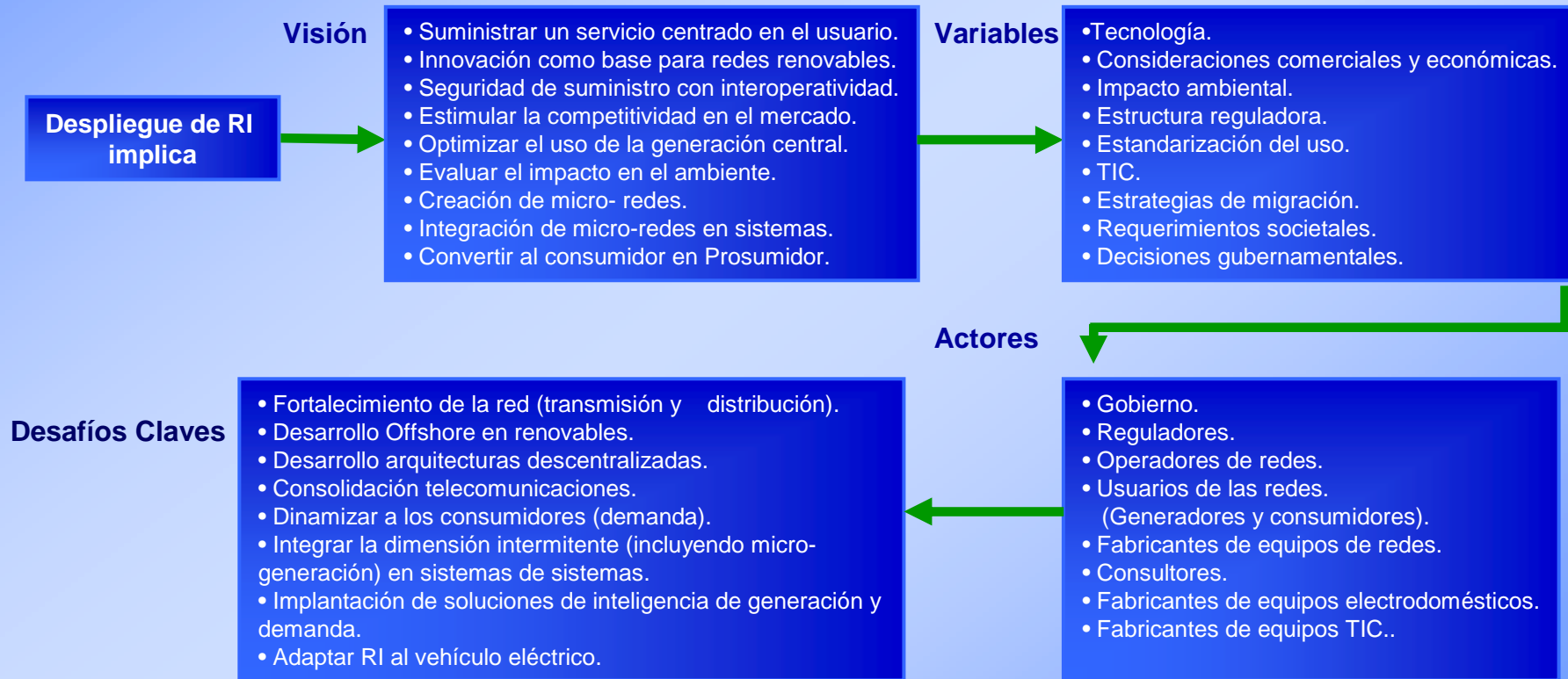
Despliegue Global e Implantación en Europa

Integración de las RI en el espacio Euro-Mediterráneo

Conclusiones

Redes Inteligentes (RI)

Smart grid o red inteligente constituye un sistema que integra innovadoras vías de transporte y distribución de electricidad con tecnología digital permitiendo: una comunicación en tiempo real entre el consumidor, el distribuidor, el transportista y el generador mediante dispositivos que hacen más eficiente y sostenible el consumo energético.



The Key Challenges for SmartGrids:

Strengthening the grid

ensuring that there is sufficient transmission capacity to interconnect energy resources, especially renewable resources, across Europe

Moving offshore

Developing the most efficient connections for offshore wind farms and for other marine technologies.

Developing decentralized architectures

enabling smaller scale electricity supply systems to operate harmoniously with the total system

Communications

delivering the communications infrastructure to allow potentially millions of parties to operate and trade in the single market

Enhanced intelligence of generation, demand and most notably in the grid and Capturing the benefits of DG and storage

Integrating intermittent generation

finding the best ways of integrating intermittent generation including residential microgeneration

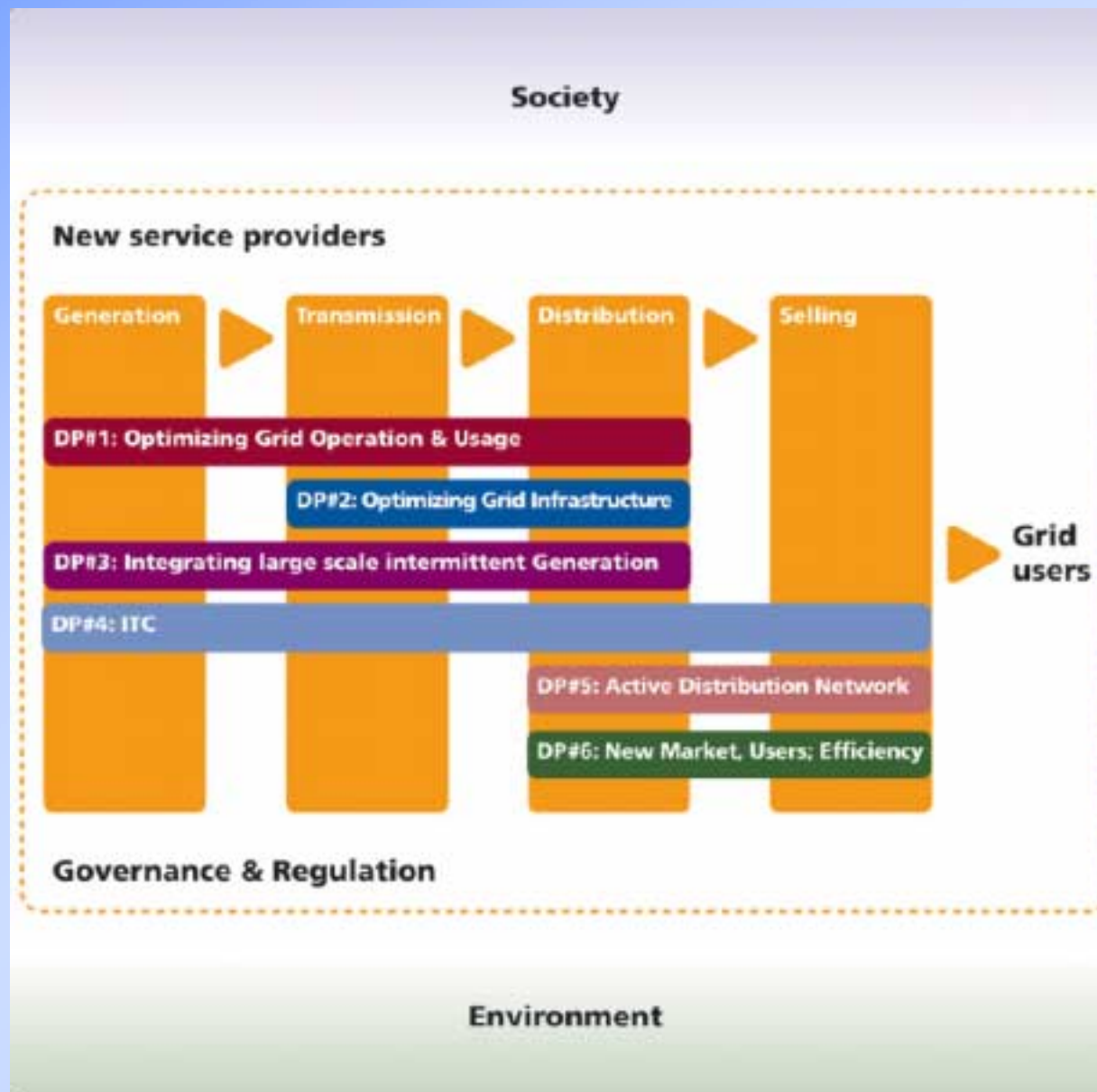
Active demand side

enabling all consumers, with or without their own generation, to play an active role in the operation of the system

Preparing for electric vehicles whereas SmartGrids must accommodate the needs of all consumers, electric vehicles are particularly emphasized due to their mobile and highly dispersed character and possible massive deployment in the next years, what would yield a major challenge for the future electricity networks.

Source: SmartGrids, 2010.

Proceso de implantación de las redes inteligentes



Smart Grids Deployment Priorities

Deployment Priority #1: Optimizing Grid Operation and Use. Timeline

deployment 2008-2012

It is about decentralized but well coordinated grid operation, operational security and market-based treatment of electric power flows. In order to manage the ever increasing demands for energy trading and security of supply, the existing transmission and distribution networks require improved integration and coordination across Euro-Mediterranean Region

Deployment Priority #2: Optimizing Grid Infrastructure. Timeline= Technology R&D ongoing deployment 2008-2020:

This deployment priority is about building new infrastructure, improving and optimizing use of existing facilities. New and efficient asset management solutions for the EU transmission and distribution grids are required, as well as coordinated and coherent grid infrastructure planning

Deployment Priority #3: Integrating Large Scale Intermittent Generation. Timeline= Technology R&D completed - deployment 2007-2020

This deployment priority is about integrating large scale on-shore and off-shore intermittent generation, notably wind power. Large-scale forms of generation, e.g. wind farms and in the future (concentrated) solar thermal generation, require networks to enable efficient collection of the power generated and enable system balancing, either by energy storage, conventional generation or by demand side participation.

Deployment Priority #4: Information & Communication Technology. Timeline= Technology R&D and standardization ongoing deployment 2008 -2015

This deployment priority is about defining the tasks and implementing the necessary standards for Information and Communication Technology solutions in future SmartGrids. The application of ICT is a pre-requisite for data exchange between the different market players in the electricity supply chain and for the secure, economic and environmentally benign operation of SmartGrids

Deployment Priority #5: Active Distribution Networks. Technology R&D ongoing for solution availability deployment 2010 – 2020

This deployment priority details the change in the distribution network, from being “passive” and dependent on human operator’s intervention to an “active” one. This is required due to the increasing complexity of network operations, to the wide deployment of distributed generation and to the increasing challenges in ensuring security and quality of supply

Deployment Priority #6: New Market Places, Users & Energy Efficiency. Technology R&D ongoing for solution availability deployment 2010 – 2020

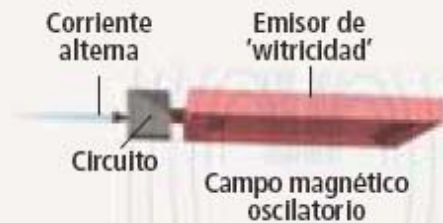
This deployment priority is about bringing customers as the focus and first line of interest of SmartGrids. Diminishing of the differences between transmission and distribution in areas such as auxiliary services, grid connection and access, but also quality and security of supply is one of the important characteristics of the whole SmartGrids concept

Source: SmartGrids, 2010.

Acoplar la ultima frontera a las fases de implantación

Electricidad inalámbrica. La compañía WiTricity comercializa la tecnología desarrollada en el MIT que envía energía a través del aire para hacer funcionar dispositivos como ordenadores portátiles, DVD, móviles y otros.

- 1** El circuito convierte la corriente alterna convencional a una de frecuencia superior y la introduce en un emisor de 'witricidad'. La corriente en el interior del emisor induce un campo magnético oscilatorio.



- 2** El dispositivo está sintonizado a la misma frecuencia que el emisor y, mediante un proceso llamado acoplamiento magnético resonante, la energía se transfiere del emisor al dispositivo.



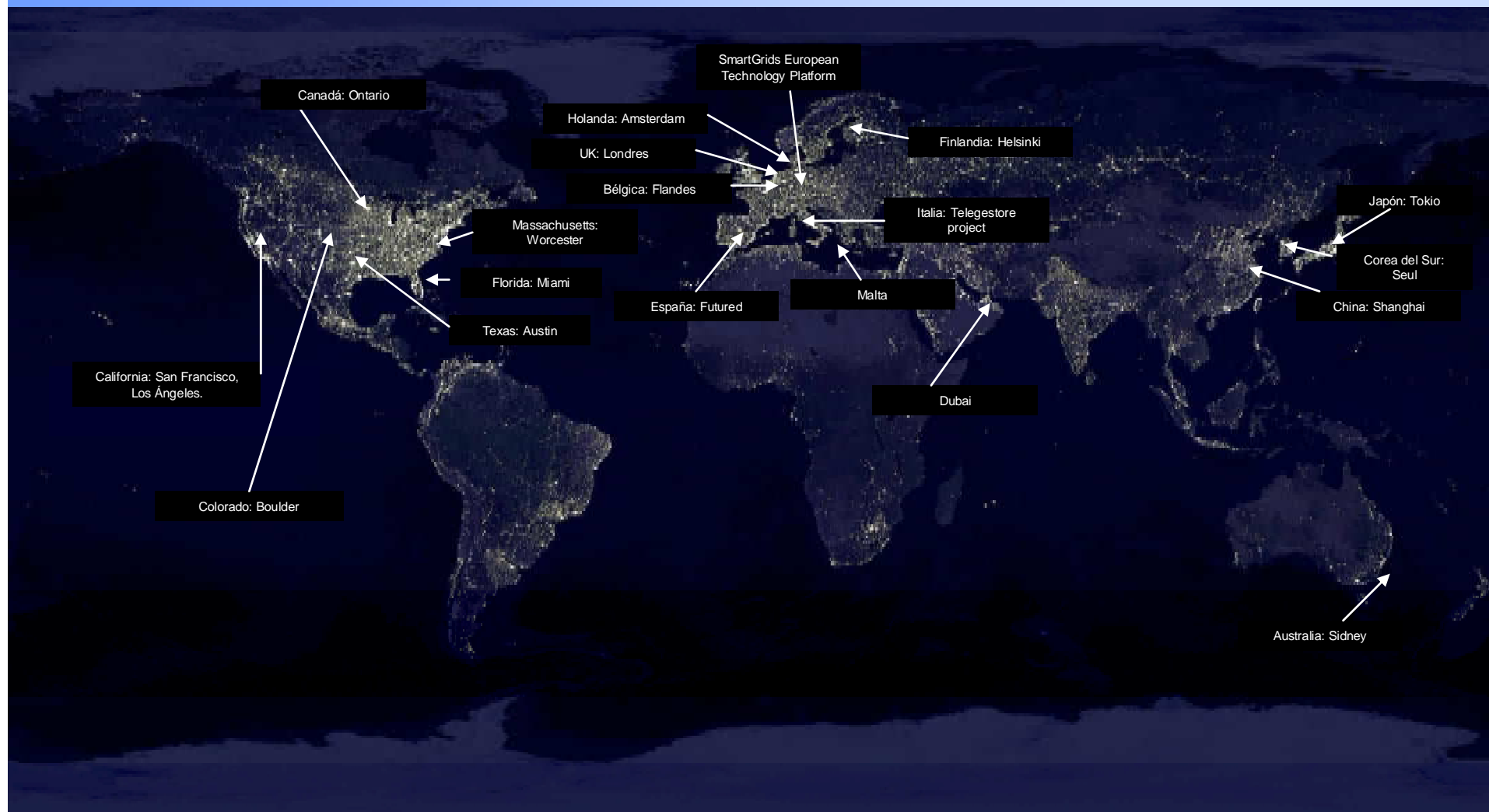
Dispositivo receptor de 'witricidad'

- 3** La energía del campo magnético oscilante induce una corriente eléctrica en el dispositivo encendiendo la bombilla.



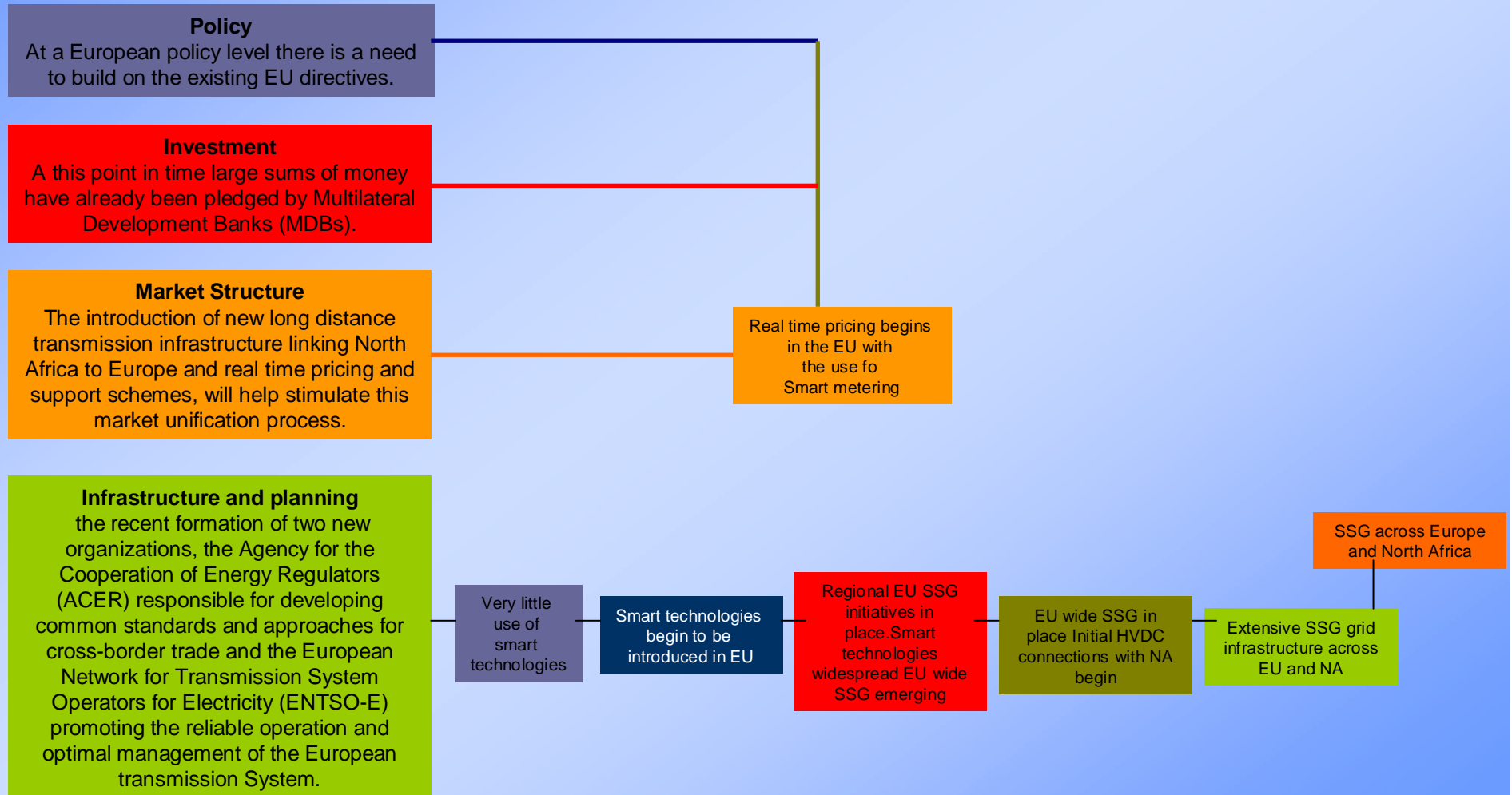
Fuente: WiTricity Corp.

Despliegue Global e Implantación en Europa



Integración de las RI en el espacio Euro-Mediterráneo

2010 2012 2015 2020 2030 2040 2050



Integración de las RI en el espacio Euro-Mediterráneo



Conclusiones

- La promoción de las redes inteligentes en todos los actores resulta vital.
- El fortalecimiento de la innovación en las empresas y los consumidores.
- Fortalecer las iniciativas pan-europeas y euro-mediterráneas entre ciudades, NUTs y gobiernos centrales.
- Cumplir con los plazos de despliegue de plazos para la creación de oportunidades de negocios.
- Comprometer al consumidor con el proceso de prosumición.
- Generar estandarización de dispositivos y sistemas TICs aplicados a las redes.
- Canalizar e integrar las inquietudes que en torno a la implantación de las redes puedan surgir, especialmente en materia ambiental.
- Promoción de I+D+i en el sector convergente TIC y eléctrico a través de centros de excelencias universitarios y parques tecnológicos europeos y euro-mediterráneos.
- La utilización de los MDL en el marco de Kyoto y su mejora en una fase Post-Kyoto como mecanismo de transferencia tecnológica a regiones menos innovadoras.

GRACIAS POR SU ATENCIÓN

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Para más información:

<http://www.iuee.eu/actualitat-iuee.asp?ap=52&id=328>

<http://www.iuee.eu/pdf-actualitat/328/Da1UNkb4hOoyLiSMgtdk.PDF>