



EDP vision on smart grids

Antonio Vidigal,
CEO , EDP Inovação

Paris, 29th March 2011

EDP is a top 3 utility in Iberia, with a strong presence in Brazil and considerable investments in USA (ranked 2nd listed wind energy company)



Portugal

Generation capacity
9.0 GW

Electricity distribution
46.5 TWh
6.1 million customers

Gas distribution
201 thousand customers

Gas supply
119 thousand customers



Brazil

Generation capacity
1.7 GW

Electricity distribution
24.4 TWh
2.6 million customers

Renewables

Europe
Generation capacity
2.9 GW
Energy generated
3.9 TWh

U.S.A.
Generation capacity
1.9 GW
Energy generated
3.9 TWh

Spain

Generation capacity
3.0 GW

Electricity distribution
9.7 TWh
628 thousand customers

Gas supply
509 thousand customers

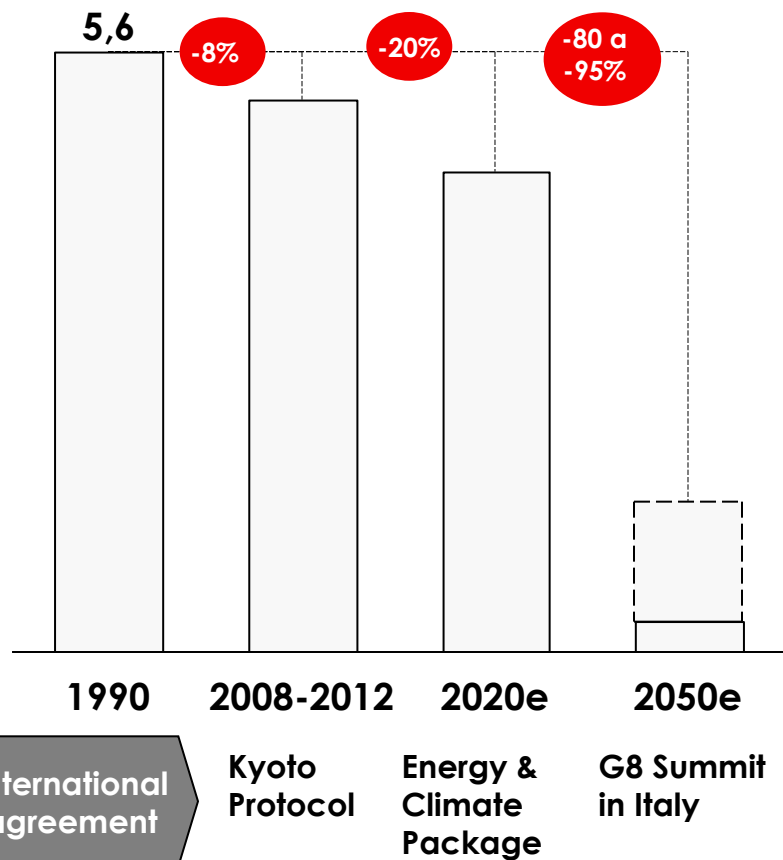


Note: 2009 figures

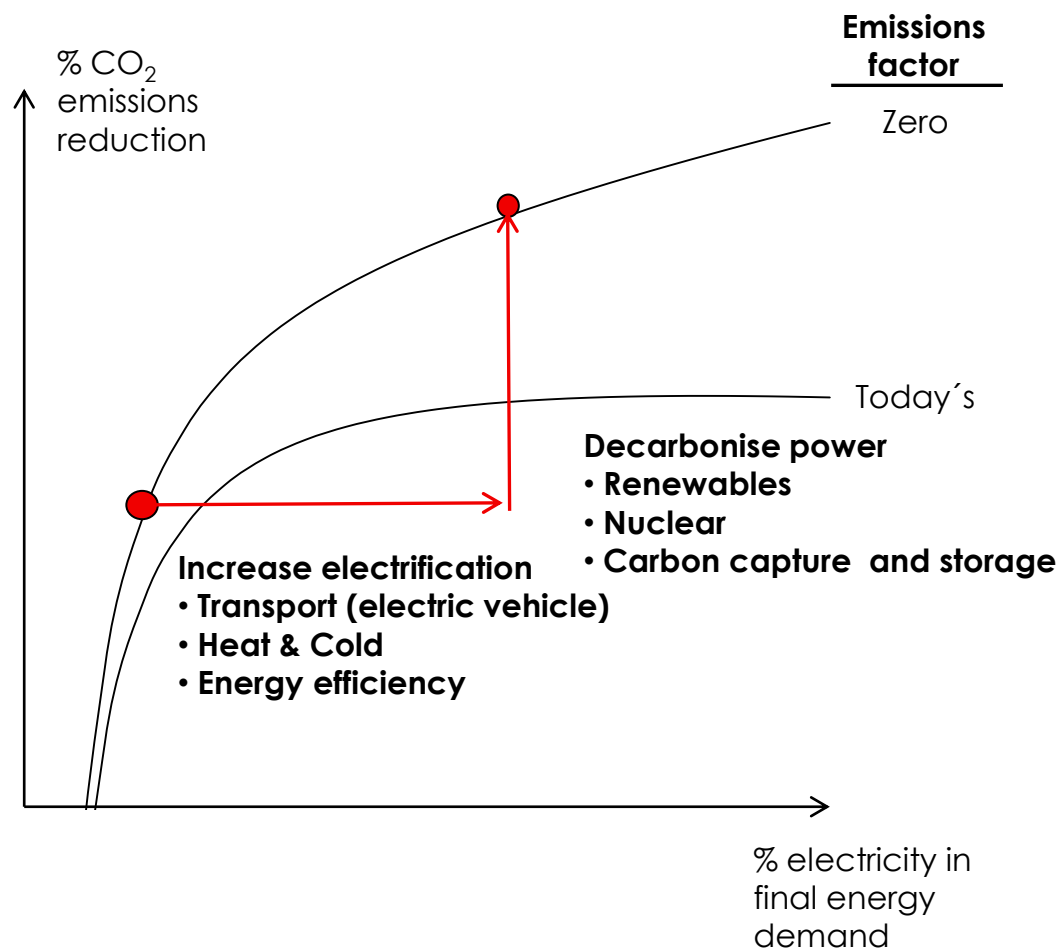
The EU has set ambitious climate goals that can only be achieved by increasing electrification of demand and decarbonising the power sector

Emissions targets in EU

GtCO₂e



Emissions reduction as a function of the share of electricity in final energy demand



Smartgrids are key to meet both the existing and the new challenges faced by DSO's...

Existing Challenges

New Challenges

Quality of service



Distributed generation

Operational efficiency



Smart grids



Energy Efficiency



Electric vehicle

...but represent an important change in paradigm in the way how utilities interact with their clients

Improved efficiency



Billing based on real time consumption

In-home displays

Electric vehicle charging network



Public lighting using LED technology

Network monitoring default detection



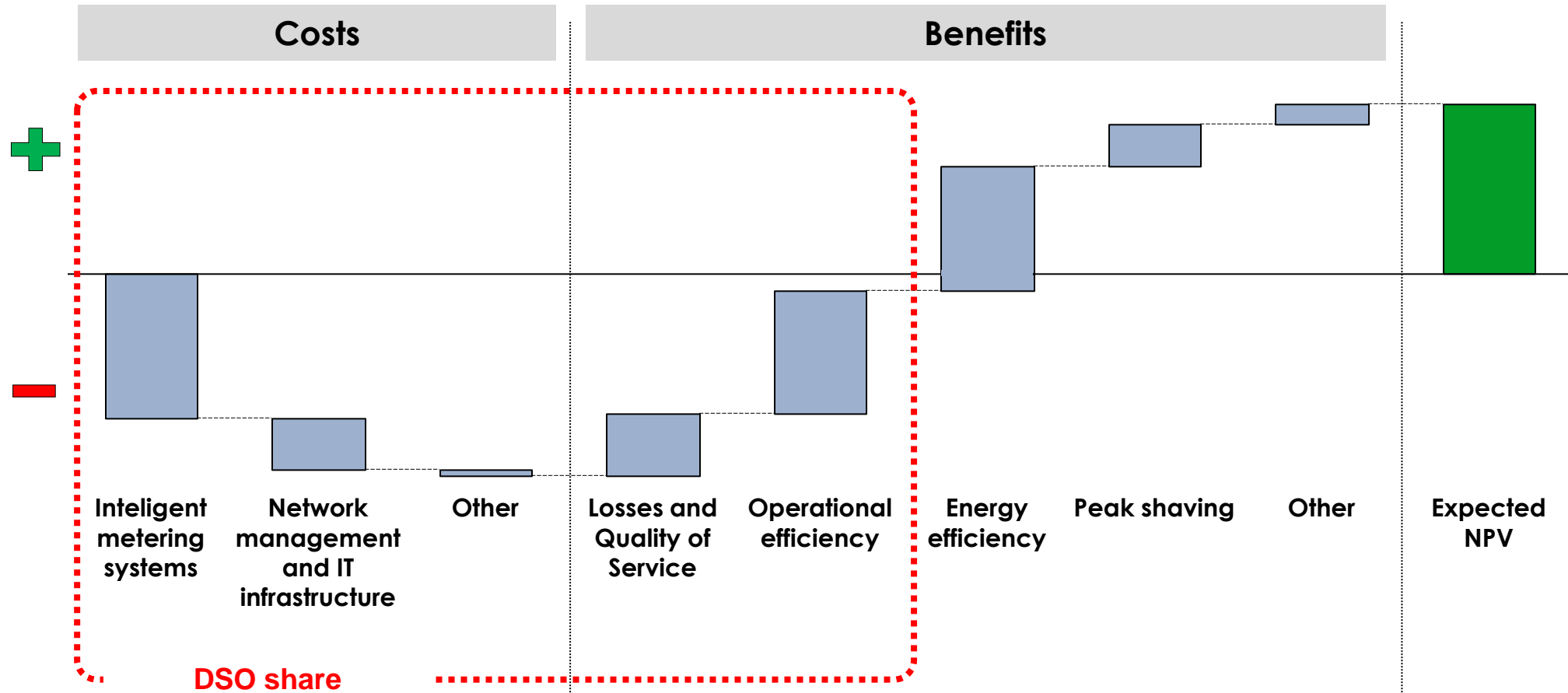
Connection to PC/PDA



Smartgrids project costs tend to be supported mostly by the DSO's while many of the benefits tend to be captured by other players (consumers, retailers, etc.)

SmartGrids project cost-benefit breakdown

ILUSTRATIVE



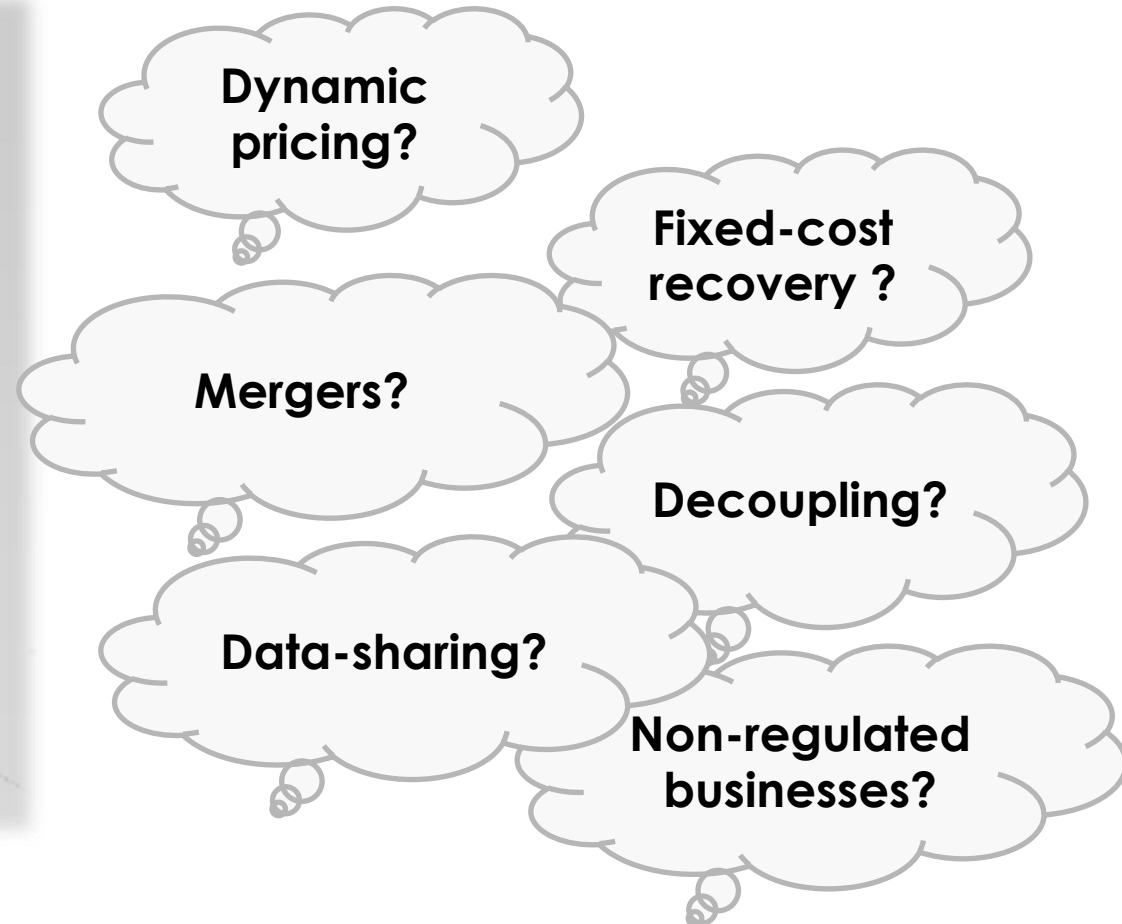
The right incentives have to be present so DSO's continue to invest in the grid renovation as the traditional business model will not sustain a modern electric industry

Invest more...

- Integrate more renewables
- Promote energy efficiency & demand side management
- Electrify transportation
- Decarbonize generation
- Modernize the grid
- Offer customers increased choice
- Provide universal service
- Keep rates low

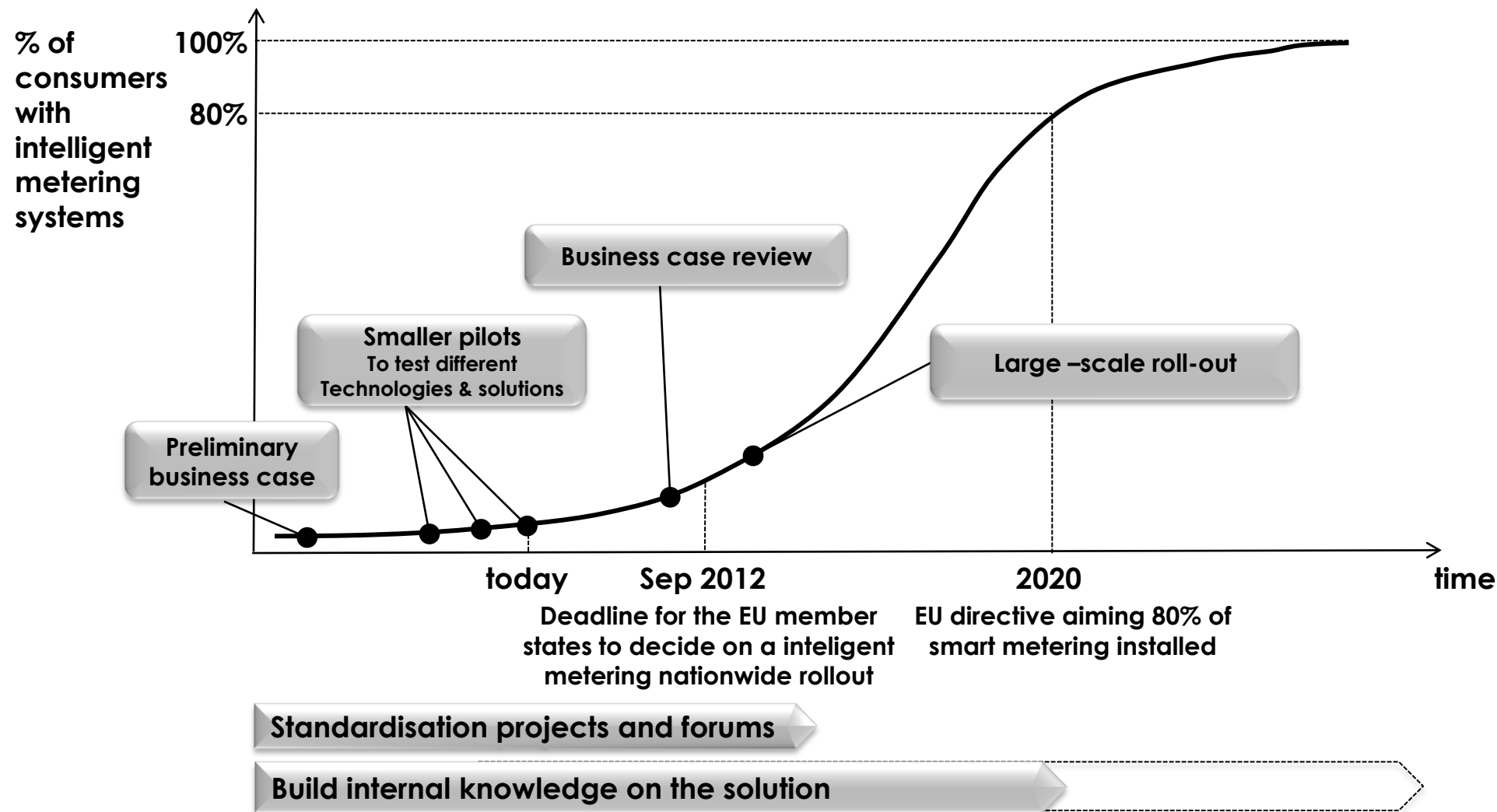
... while reducing earnings

- selling less energy



There is a roadmap to be completed before large scale installation of smartgrids in all clients

Typical S-curve for new technology adoption



EDP implemented in 2010 an innovative pilot smartgrids project in Évora Municipality (InovCity) with 30.000 consumers



Mission

- The **InovCity project** is an **innovative smartgrids project** aimed at improving the electrical distribution grid while **reducing operating costs, fostering energy efficiency and enhancing environmental sustainability**

Objectives

- The installation of a smartgrids solution in Évora Municipality in up to **30.000 consumers** by February 2011
- A group of selected **customers will benefit from the installation of new products and services** developed on top of the infrastructure allowing them to be more active and to take more control about their energy consumption

Project differentiation drivers

- Represents a **real contribution to the EU 20-20-20 goals** and is fully aligned with the **Lisbon Agenda**, enhancing a more competitive and innovative Europe
- InovGrid is on **cutting-edge of technology** regarding SmartGrids
- **It's an internationally recognised project**, chosen as **1 of 15 smartgrids case-study projects among 200 European projects**
- **Act as an enabler of new technologies** such as: LED public lighting, the electric vehicle and renewables
- Has a clear **goal to enhance consumer awareness and participation** as key to achieve European energy goals

InovCity Évora, Portugal

You are invited!



Visit us at:

www.inovcity.pt