entsoe
Reliable Sustainable Connected

InnoGrid2020+

The European Research & Development Dissemination Seminar
23-24 February 2012

EDSO for smart grids

InovGrid

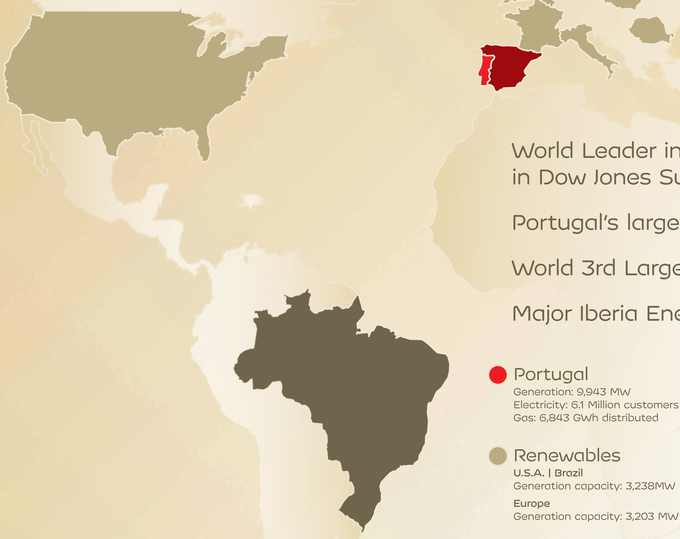
Smart Energy Grid

edp distribuição

inovgrid

EDP Group

ENERGY DISTRIBUTION FOR ABOUT 10 MILLION CUSTOMERS



World Leader in the Electric Sector in Dow Jones Sustainability Indexes.

Portugal's largest industrial group.

World 3rd Largest Wind Company.

Major Iberia Energy Player.

Portugal
Generation: 9,943 MW
Electricity: 6.1 Million customers
Gas: 6,843 GWh distributed

Brazil
Generation capacity: 1,735 MW
Electricity: 2,7 Million customers

Renewables
U.S.A. | Brazil
Generation capacity: 3,238MW
Europe
Generation capacity: 3,203 MW

Spain
Generation capacity: 3,872 MW
Electricity: 1 Million customers
Gas: 45,644 GWh distributed

Évora

THE PORTUGUESE INOVCITY IN SHORT

inovcity
smart energy living

- **Évora municipality:**
  54.000 inhabitants
  1.307 km2 of area (urban and rural)
- **The project includes:**
  30k EDP Boxes and 341 DTCs
  Integration of IT systems
  Communications infrastructures
  New services and products
- **Involvement of the major players of the municipality**
- **Coordination with the national EV charging network**

ÉVORA INOVCITY HAS DIMENSION, DIVERSITY OF CUSTOMERS AND CONTEXT TO EVALUATE THE SOLUTION, HAVING VISITS FROM 30+ NATIONALITIES

inovgrid

City Hall

Mobi-e vehicle

InovCity Shop

VIP Visits

Public Lighting

Évora historic monuments

DTC in LV Substation

Public EDP Box

Inovcity conference

InovGrid was selected by EC/JRC/Eurelectric as the single case study for Smart Grid assessment methodology

eurelectric — ELECTRICITY FOR EUROPE

JRC EUROPEAN COMMISSION

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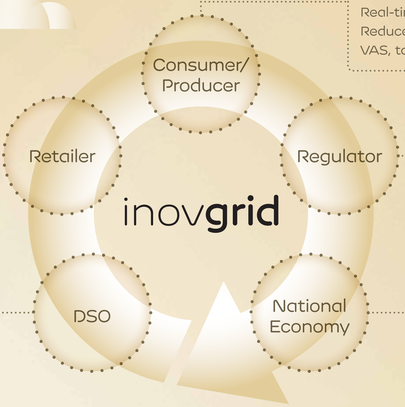
IMPACTS ALL STAKEHOLDERS ACROSS THE ENERGY VALUE CHAIN



Improve access to DG and Micro Generation.
Real-time access, billing and services.
Reduce energy costs.
VAS, tariffs and price plans

Innovative price plans and ToU tariffs.
Improvements on the customer Relationship.
Provide new services.
Reduce entry barriers.

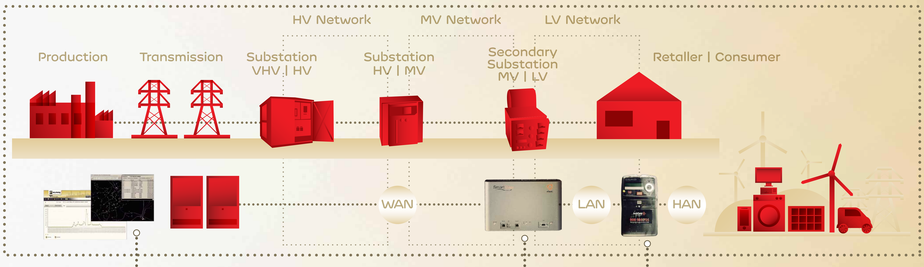
Increases market transparency.
Enhances reliability and quality of service.
New tariffs models.
Modern economy, sustainability.

Reduce operational and maintenance costs.
Optimized network management and control.
Reduced Losses.
Investment optimization.
Improve quality and reliability of supply.

Helps to meet the European energy goals.
Improves energy efficiency.
Promotes renewable energy.
Boosts R&D and economy.

EDP developed InovGrid architecture focused on customers participation and network integrated infrastructure

Distribuition Network

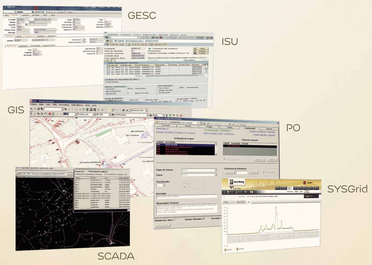


Central Systems
(commercial & technical)
. Management
. Operation
. Data management
. Integration with current sustems
. ...

Distribituion Transformer Cotroller (DTC)
. Monitoring & Control
· Metering
· Concentrator
· Microgeneration and load control (future)
· ...

EDP Box (EB)
. Metering
· Remote operation
· Circuit breaker
· Tariff flexibility
· HAN interface
· QoS informtaion
· ...

IMPACT IN 10 SYSTEMS, 30 INTERFACES, 80 BUSINESS PROCESSES



CUSTOMERS WITH IN-HOME DISPLAYS AND EFFICIENCY SOFTWARE IN PC/PDA

SOME CUSTOMERS SHOW SIGNIFICANT GAINS ON CONSUMPTION E FFICIENCY

During 2012 EDP plans to install 100,000 EDP Boxes in 6 areas with different characteristics and technologies across Portugal