



Evaluation from the energy providers perspective

Energy efficiency in Enel

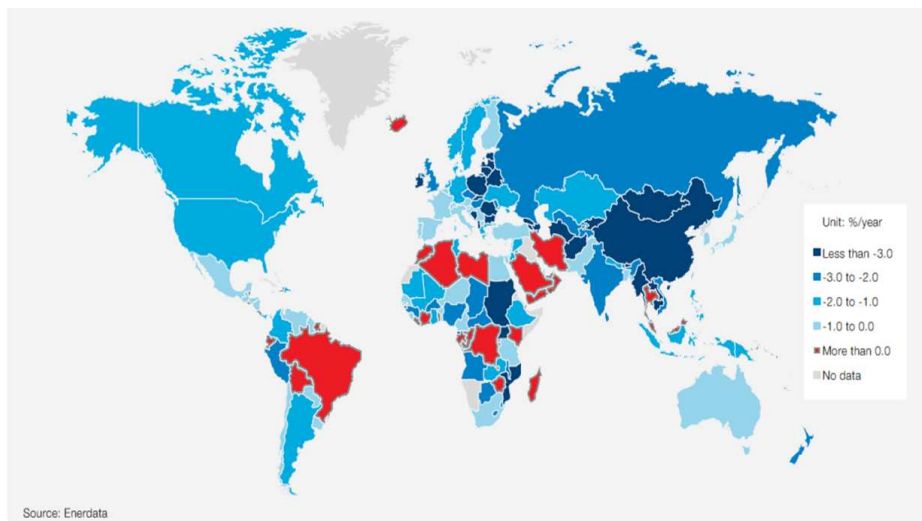
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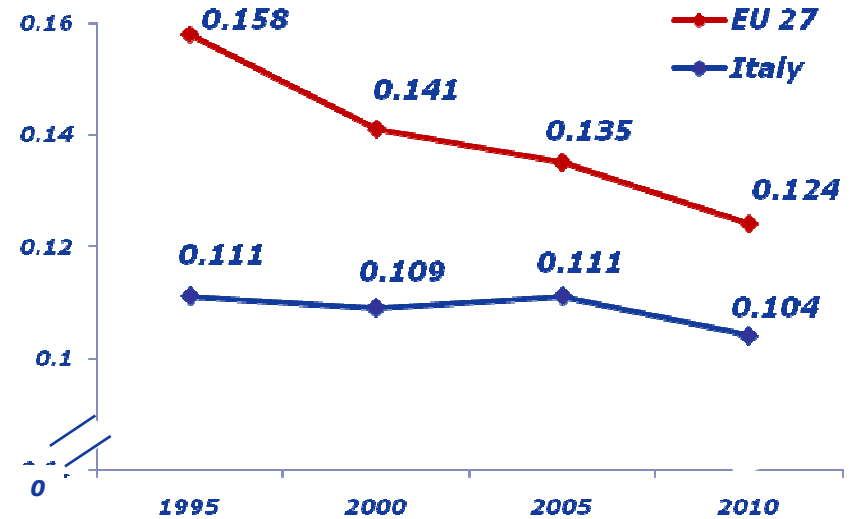
Rome, July 13th 2012

Global trends in energy efficiency

Global energy intensity (%) (1990-2009)



Energy intensity all sectors (kep/\$05)

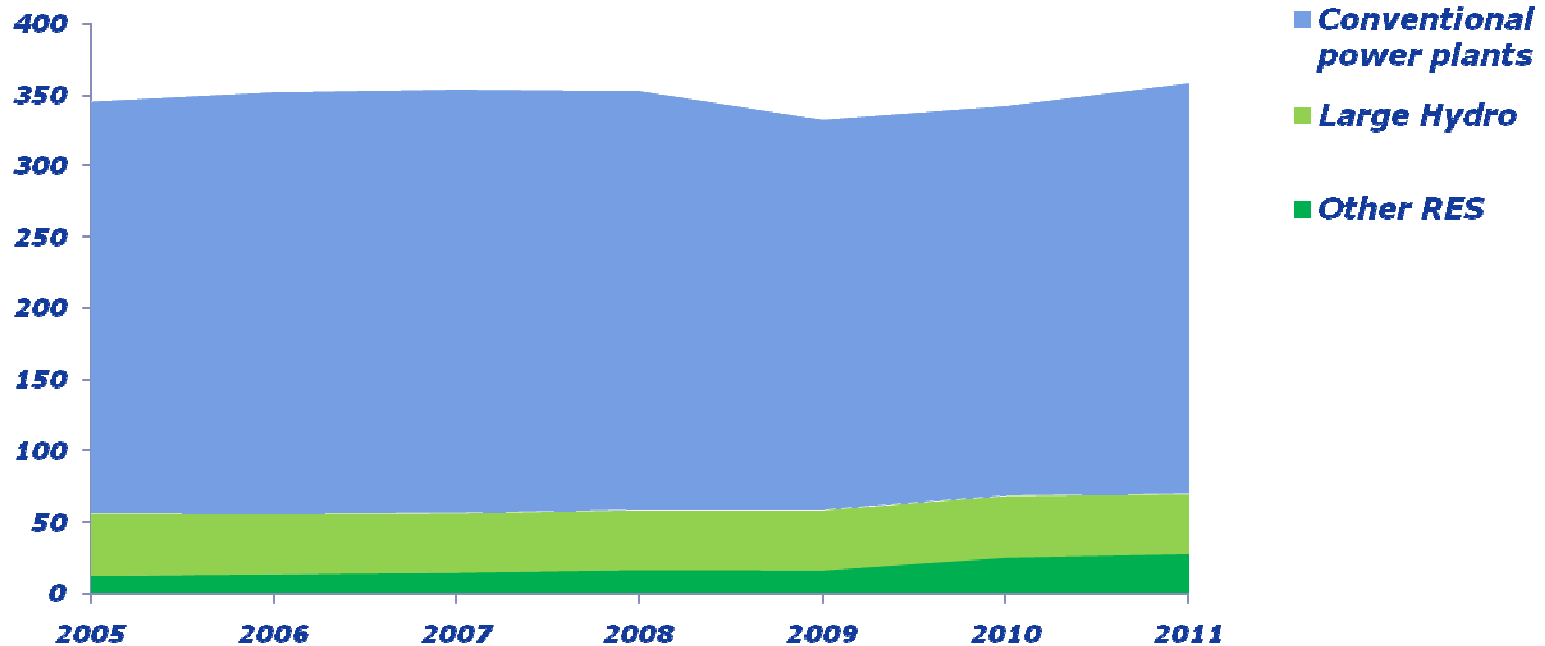


Energy Efficiency is here to stay

Evolution of italian electricity demand

TWh/year

Gross final electricity consumption 2005-2011

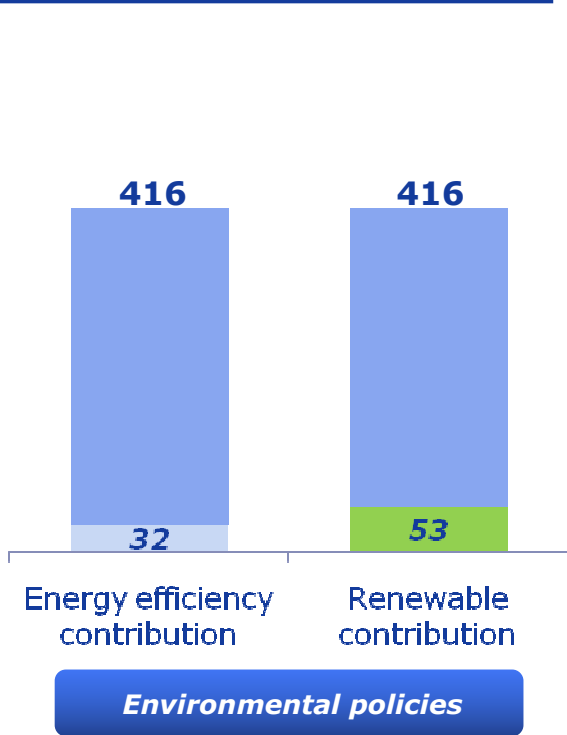


Hard to separate effects of wider economic dynamics from policy intervention

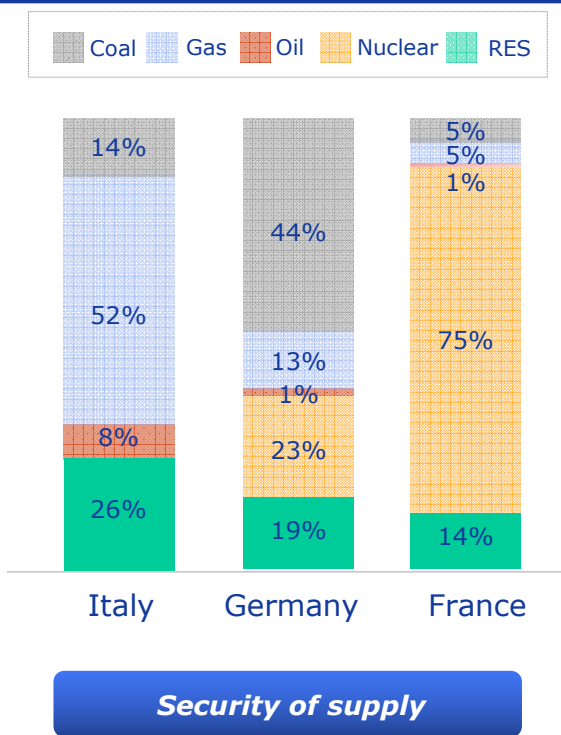
Source: Actual electricity demand based on GSE data

Main drivers for energy efficiency

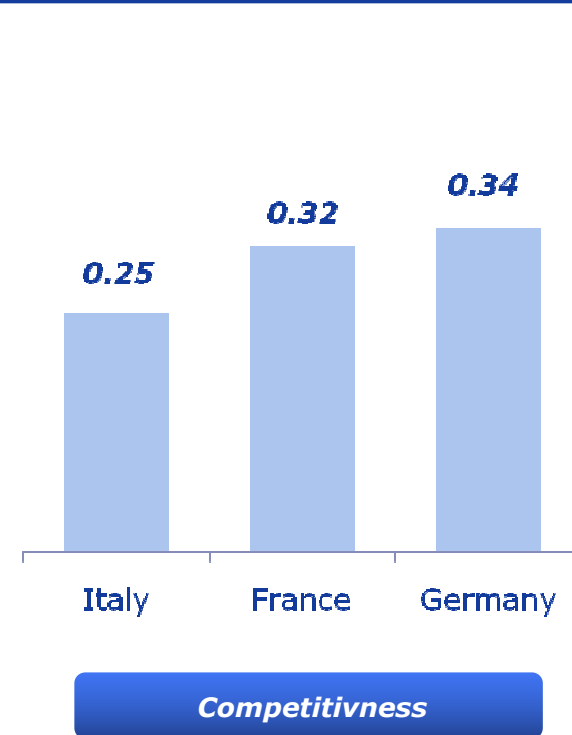
CO₂ Target by 2020 (MtCO₂/yr)



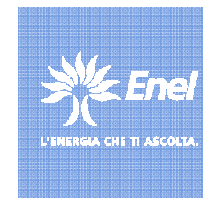
2010 Energy electric mix (%)



2009 Energy intensity of steel (toe/t)



Stable trend based on diversified drivers

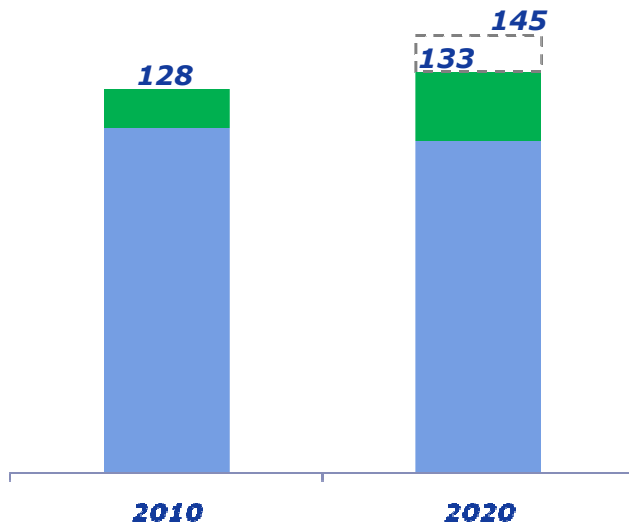


Italian energy trends for the future

Energy final consumption (Mtoe/yr)

■ Conventional plants

■ RES

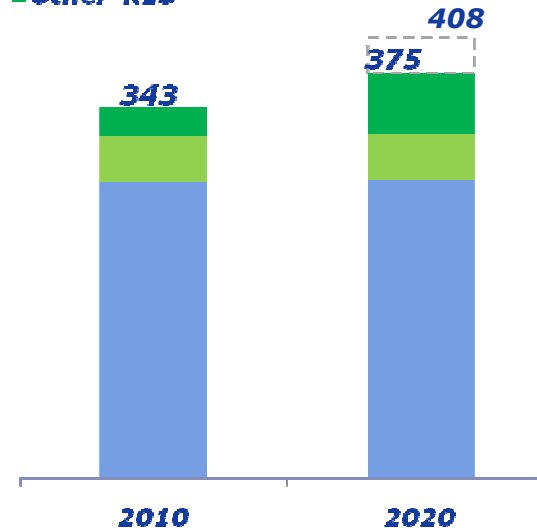


Electricity final consumption (TWh/yr)

■ Conventional power plants

■ Large Hydro

■ Other RES

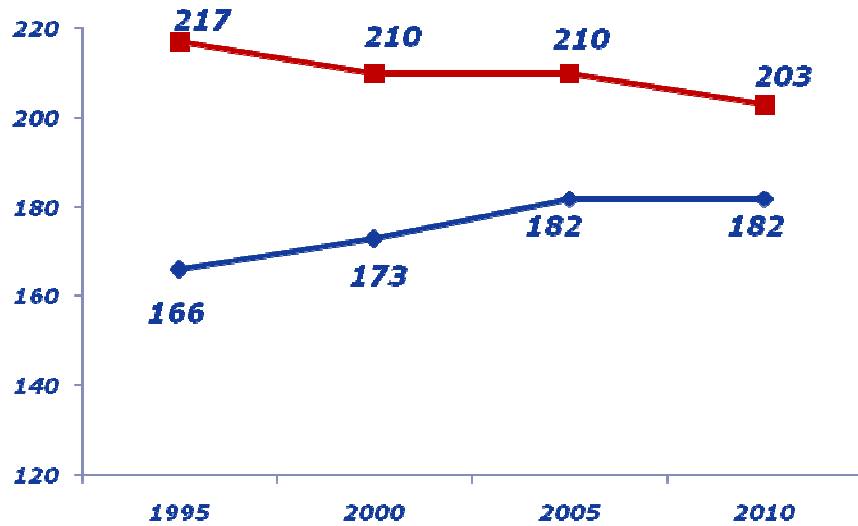


Energy efficiency and renewable energy are expected to play a significant role

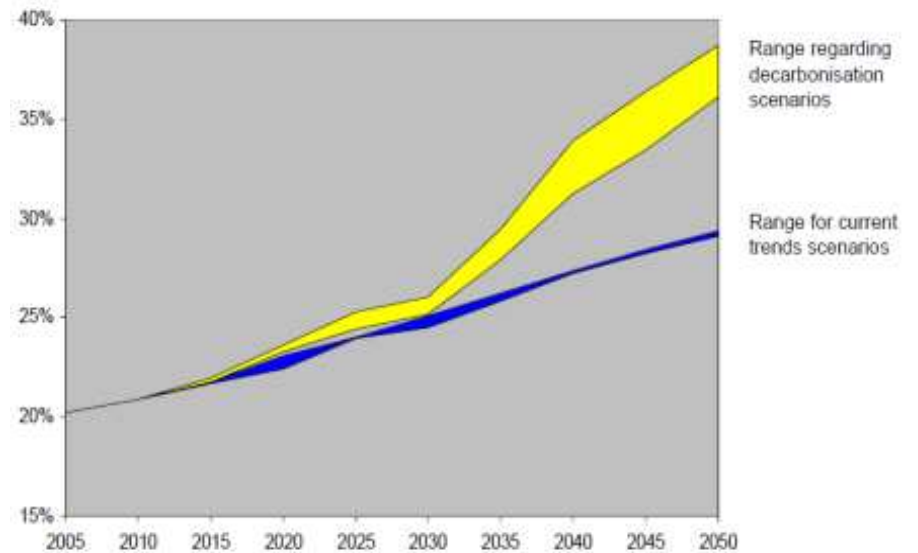


The role of electricity

Electricity intensity - all sectors (kWh/k\$05) ¹



Share of electricity in final energy demand² %

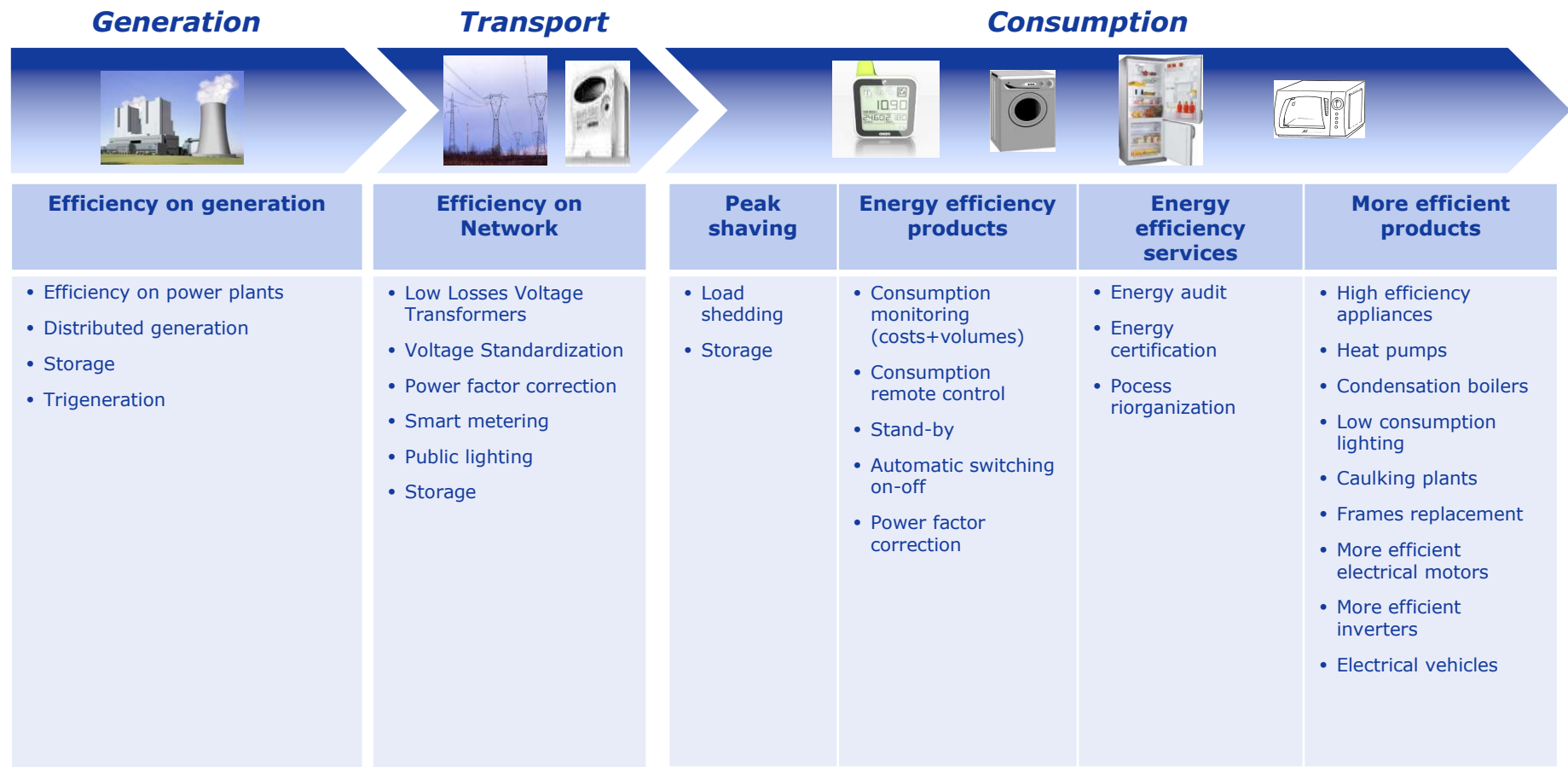


Electricity is not the problem but rather part of the solution

¹Source: Enerdata 2011
²Source: Roadmap 2050



Energy efficiency along the value chain



Energy efficiency interventions are diversified and distributed along the entire energy value chain



Some of our key initiatives

Generation

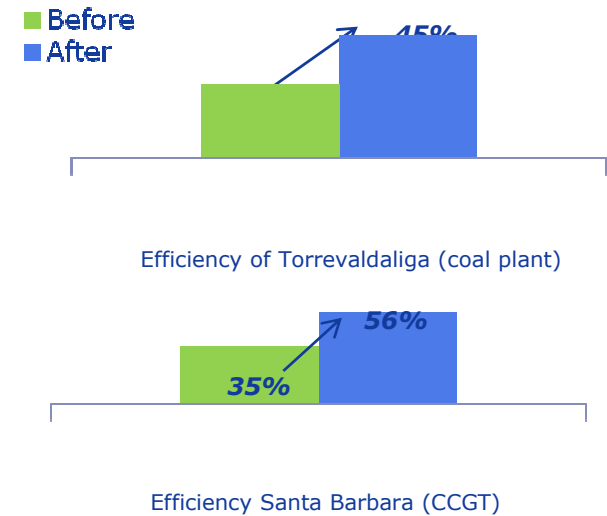
Efficiency of power plants



- New coal power plant : **≈2.000 MW** in operation between 2009 and 2010



- New CCGT plant: Since 2000 **≈ 6.000 MW** in operation



Distributed generation



- EnelSi confirmed its position as Italy's leading plant franchisor with over **950 sales** outlets as of December 31st, 2011



- In 2011, Enel Green Power registered an installed capacity of renewable of approximately 3GW

Some of our key initiatives

Infrastructure

Smart Grids



- Enel investments up to 2020: 4,9 mld €
- Job unit in the company: 23.500
- Job unit for component production in Italy: 8.800
- Investment in Italy : 7,3 mld€

Smart meters



- Enel investment to date: 2,1 mld€
- Enel investments up to 2020: 2,1 mld€
- Investment in Italy: 5,5 mld€
- 32 Mln of meters
- 600.000 reading in a day

Public lighting



- 80.000 LED sold
- Energy saving -55%
- CO2 emissions avoided > 12.800 ton
- New Archilede line with more saving

Some of our key initiatives

Consumption

Energy efficiency products



Consumption monitoring and Consumption remote control

- Implementation of a large-scale test (1800 customers)
- Analysis of customer acceptance and behavior
- Design of a possible business model in domestic consumption monitoring

Energy efficiency services



Energy certification

- Partnership with CEOnline and BIP-Ars et Inventio to realize one innovative sale model of energy certification for final customer
- CEOnline is a platform linked to a Network of 2.500 certification companies in Italy

More efficient products



Heat pumps and condensation boilers

- Partnership with Domotecnica
- 1.244 Companies; 7.400 employees; 90 Partner; 21 project offices

High efficiency appliances

- Enel card promotion allowing to purchase about 60.000 high efficiency appliances

Low consumption lighting

- Free distribution of about 30 Mln of LFC

Electric vehicles

- Partnership with automotive companies (Mercedes-Smart; Nissan; Renault; Piaggio; Peugeot etc)
- Smart reload infrastructure based on electric meters (800 distributors in Italy)
- Agreement with public/private fleets and car sharing



The role of evaluation

On the project level

- ***Non-economic barriers*** – the role of non-economic barriers in raising intervention costs
- ***Behavioral changes*** – the expected impact of non structural changes
- ***Additionality*** – identifying appropriate baselines to calculate savings
- ***Diversified mix*** – evaluating the impact of diversified measures on diversified targets

The role of evaluation

On the program level

- ***Technology focus*** – supporting most promising technologies in terms of both technical performance and potential market penetration
- ***Economic analysis*** – supporting multicriteria and cost-benefit analysis
- ***Selection of instruments*** – choosing the policy instrument depending on the target and the technology

Conclusions

- ✓ Increasing energy efficiency is a structural phenomenon being accelerated by policy and regulatory drivers
- ✓ The market can provide a real contribution and utilities are ready to be part of the solution
- ✓ Mainstreaming energy efficiency evaluation activities in the public, but also in the private, sectors plays a key role