



EIB Financing of Electricity Networks

Present and future in the “Smart Grid” perspective



- **The European Investment Bank**
- **EIB Lending Strategy in Energy Projects**
- **EIB Lending Strategy in Electricity Networks**
 - Electricity Distribution
 - Active Distribution Grids
 - Electricity Transmission

The European Investment Bank (EIB)

- ❖ European Union's long-term lending bank set up in 1958 by the Treaty of Rome.
- ❖ Shareholders: 27 EU Member States
- ❖ Long-term finance promoting European objectives

- ❖ EIB lending in 2009
 - ❖ European Union: EUR 70.5bn
 - ❖ Partner countries: EUR 8.6bn
 - ❖ Total lending: EUR 79.4bn

- ❖ + 38% over 2008 (EUR 57.6bn)



EIB lending strategy in energy projects

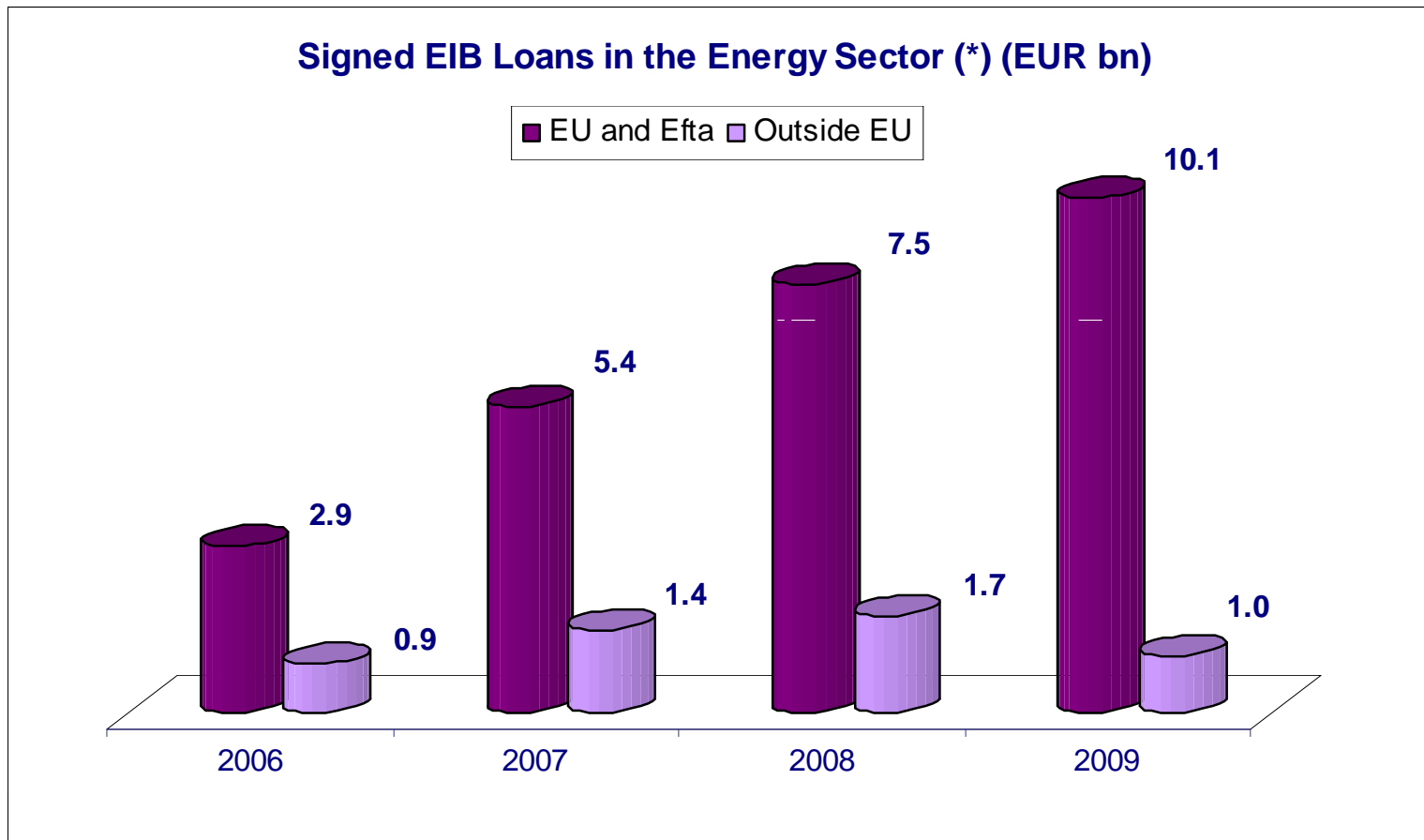


- Energy became a new priority objective in the EIB Corporate Plan by end 2006;
- Four priority lending areas:
 - Renewable energy;
 - Energy efficiency;
 - Diversification and security of internal supply (including TEN-E);
 - External energy security and economic development.
- Projects' requirements:
 - Be reasonably mature and with good permitting prospects;
 - Be technically sound;
 - Be financially viable and show an acceptable economic return (benefits offset the costs);
 - Comply with National and EU environmental and procurement regulation.
- Up to a maximum of 50% of total investment cost;
- Minimum total investment cost of EUR 25 million for direct EIB loans.



EIB lending strategy in energy projects

Lending in Energy (2006-2009)



(*) solid waste management, refineries and renewable energy manufacturing NOT included



EIB lending strategy in electricity networks

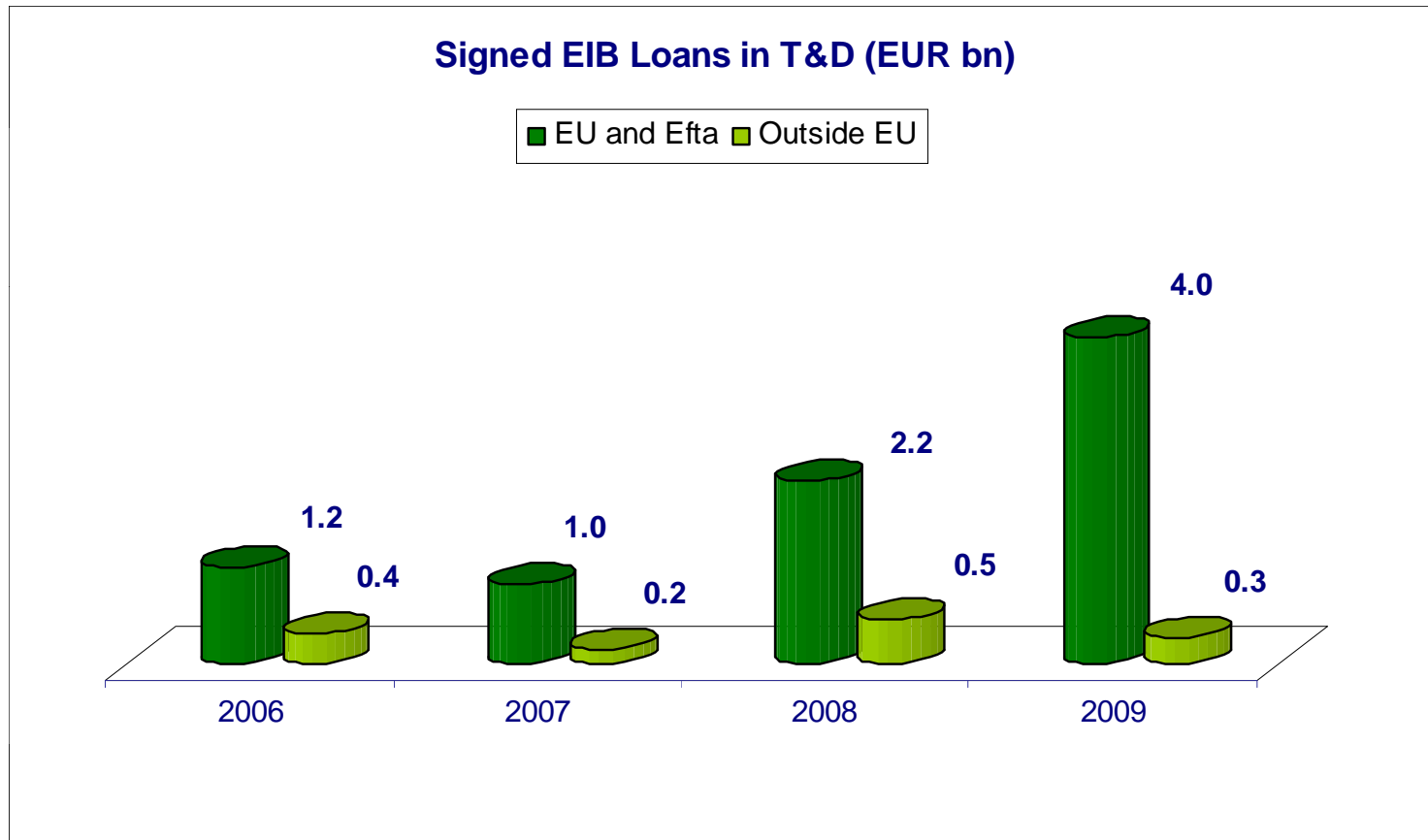


- The EU policy defines a strategy for more sustainable, competitive and secure energy system;
- Development of a new concept of T&D electricity networks (Smart Grid) is a key factor to assist this strategy;
- Consistently upward trend in lending volume over the last 2 years;
- On average 30-40 % of total lending in energy in the EU;
- Share of lending in the EU: 70% distribution, 30% transmission



EIB lending strategy in electricity networks

Lending in T&D (2006-2009)





Lending in electricity distribution in the EU

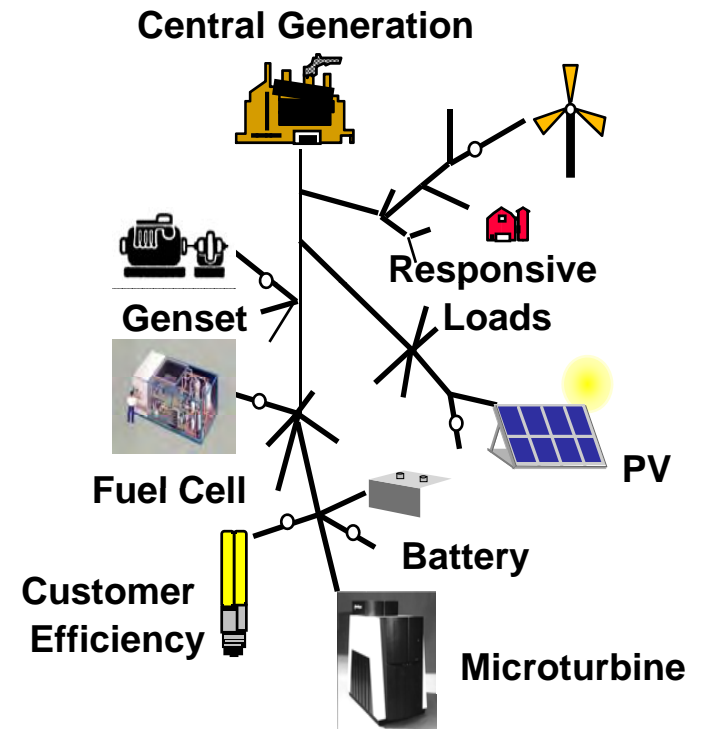


- Programme lending approach: financing of electricity distribution programmes covering the majority of the investment needs of a DNO over a 3-4 year period;
 - Main capital-intensive tasks: reinforcements to meet growing demand and replacements of ageing assets;
 - Tasks that may fall under the “Smart Grid” concept: enhancement of remote-control and automation, and installation of electronic meters;
 - Goals: to maintain (or improve) the current standards of network safety and reliability, and reduce operating costs;

- Low business risk given the monopoly nature of distribution services and the established regulation in place → relatively easy access to debt financing;

Active Distribution Grids

- Large-scale demonstration projects for active distribution grids - *integrated control of responsive loads, DG, system configuration, and storage* - ready to start soon;
- Demonstration projects often benefit of national and EU (FP7) financial support and are eligible for EIB financing;
- Issues: a) effort to standardize active grid solutions, b) assessment of related costs and benefits, c) definition of the remuneration scheme for investments;
- Large-scale deployment of active distribution grids: significant potential for increased EIB activity in the 2020 horizon.





Lending in electricity transmission in the EU



- ❖ Programme lending approach and financing of large interconnectors;
 - ❖ Goals: integration of bulk renewable resources, system reinforcements (both internal and cross-border) to enable efficient exploitation of generation resources, system reliability;
- ❖ The transmission infrastructure already meets a number of “Smart Grid” requirements, although there is room for improvements in the domain of power system control and monitoring;
- ❖ Low business risk given the monopoly nature of transmission services and the established (and often very generous) regulation in place → relatively easy access to debt financing;
- ❖ Increasing investments for infrastructural developments are foreseen in the 2020 horizon (i.e. harvesting of the off-shore wind generation potential).



Lending in electricity transmission in the EU Interconnections



- EIB active in electricity interconnections since many years;
- Recent “special” interconnection projects:

Project	Countries	Description	Eligibility	Remuneration	EIB Loan
NorNed	NO-NL	Bipolar HVDC, 700 MW, ± 450 kV, 576 km	Security of Supply, Market Competition	Market Based (Price arbitrage)	280 mEUR
BritNed	UK-NL	Bipolar HVDC, 1000 MW, ± 450 kV, 254 km	Security of Supply, Market Competition	Market Based (Price Arbitrage)	300 mEUR
EWIC	IR-UK	Bipolar HVDC (VSC, XLPE), 500 MW, ± 200 kV, 256 km	Security of Supply, Support Development of RES	Regulated	300 mEUR

- + a large number of Regulated AC interconnections embedded in Transmission Investment Programmes;
- Under the boost of the financial support of EEPR (European Energy Programme for Recovery), 2010 is envisaged to be the most prolific year as ever for lending operations in electricity interconnection projects.