



Sustainable energy and security of energy supply

the view of the European Investment Bank

*Dr Matthias Kollatz-Ahnen
Vicepresident*

The energy industry challenges today



Security of supply

- ❖ Increasing energy demand vs. recent geopolitics
- ❖ Oil and gas will remain to be main sources of energy for the next decades.
- ❖ Heightened concerns re. nuclear energy

Environmental challenges

- ❖ Energy is responsible for 85% of GHG emissions to the atmosphere
- ❖ Urgent transition to a low carbon, efficient and secure energy supply system

Competitiveness

- ❖ Price volatility erodes competitiveness
- ❖ Supplies needed in a timely and reliable manner to ensure price stability

Energy poverty

- ❖ 1.5 bn people lack access to electricity
- ❖ Unavailable infrastructure and/or unaffordable energy budget

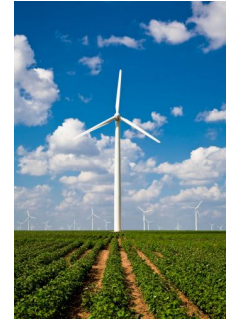


The investment challenge



- ❖ Security of supply
 - ❖ Replace and update existing energy infrastructure
 - ❖ Ensure sufficient upstream investment to add new fossil fuel resources
 - ❖ Save energy
 - ❖ Diversify the sources of energy
 - ❖ Well-interconnected network and well managed intelligent-grid
 - ❖ Improve nuclear safety

- ❖ Climate change
 - ❖ Renewable technologies: Deploy existing ones and develop new sources
 - ❖ Energy efficiency and energy intensity reduction measures





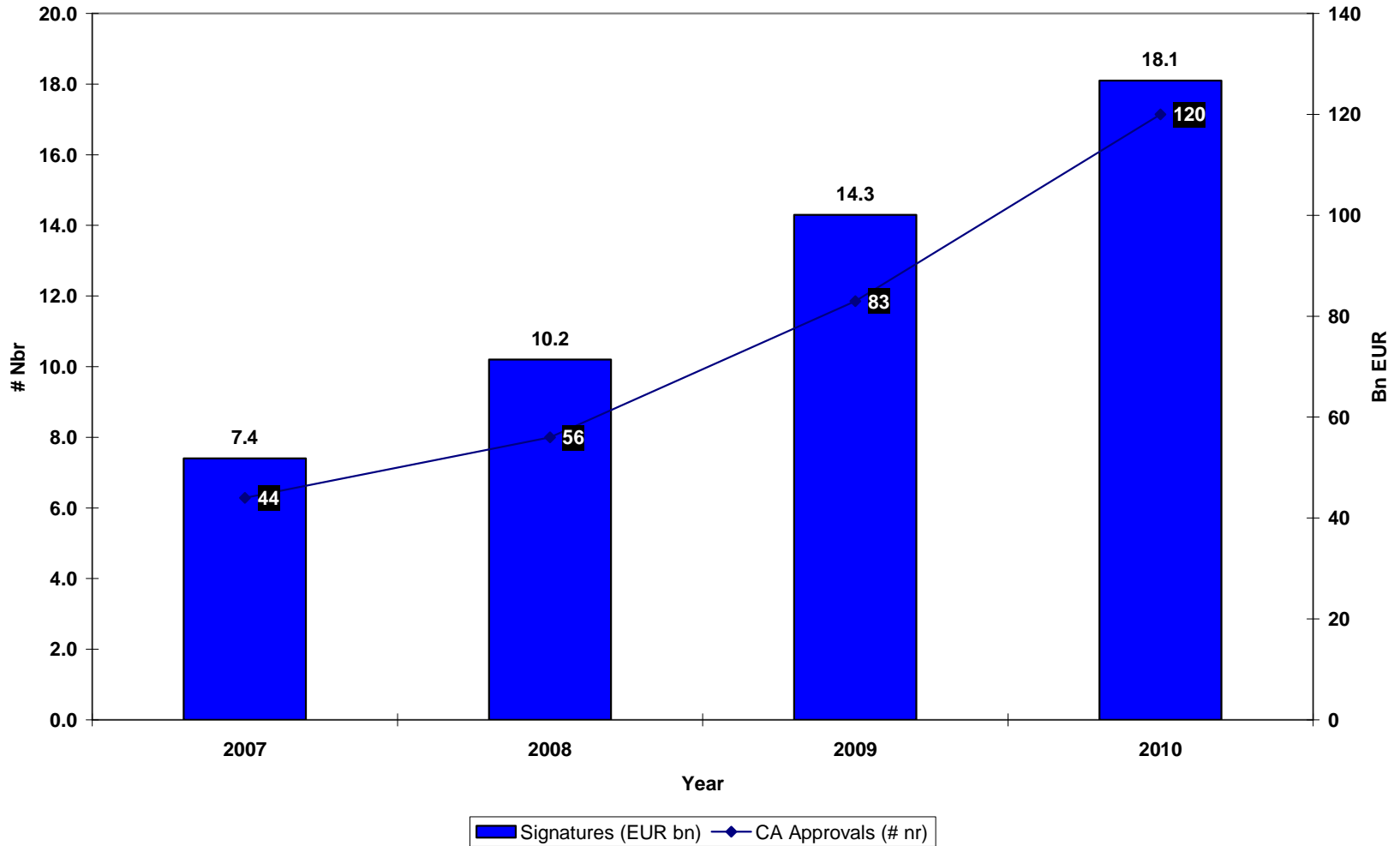
- Four priority areas
 - Renewable energy
 - Energy efficiency
 - Diversification and security of internal supply (including TEN-e)
 - External energy security and economic development

- Individual loans in EU energy sector, 2010 : EUR 14.5 bn
 - of which 2.3bn - TEN-e projects
 - 4.6bn - electricity grids
 - 2.1bn - gas grids, storages and LNG
 - 5.3bn - renewable energy
 - 2.5bn - Others

- Individual loans in EU, 2006-2010 : EUR 47 bn
 - of which 8.6 bn - TEN-e projects
 - 14.3bn - electricity grids
 - 8.3bn - gas grids, storages and LNG
 - 14.8bn - renewable energy
 - 9.6bn - Others

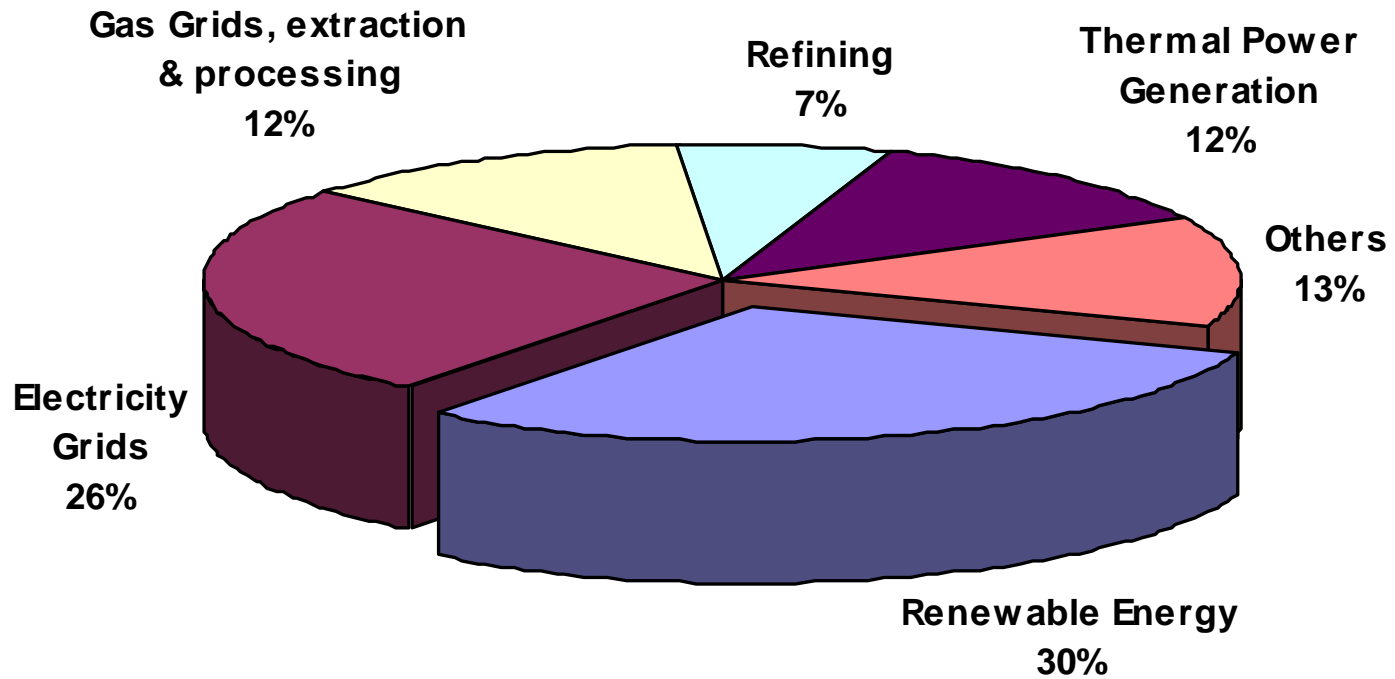


EIB energy lending





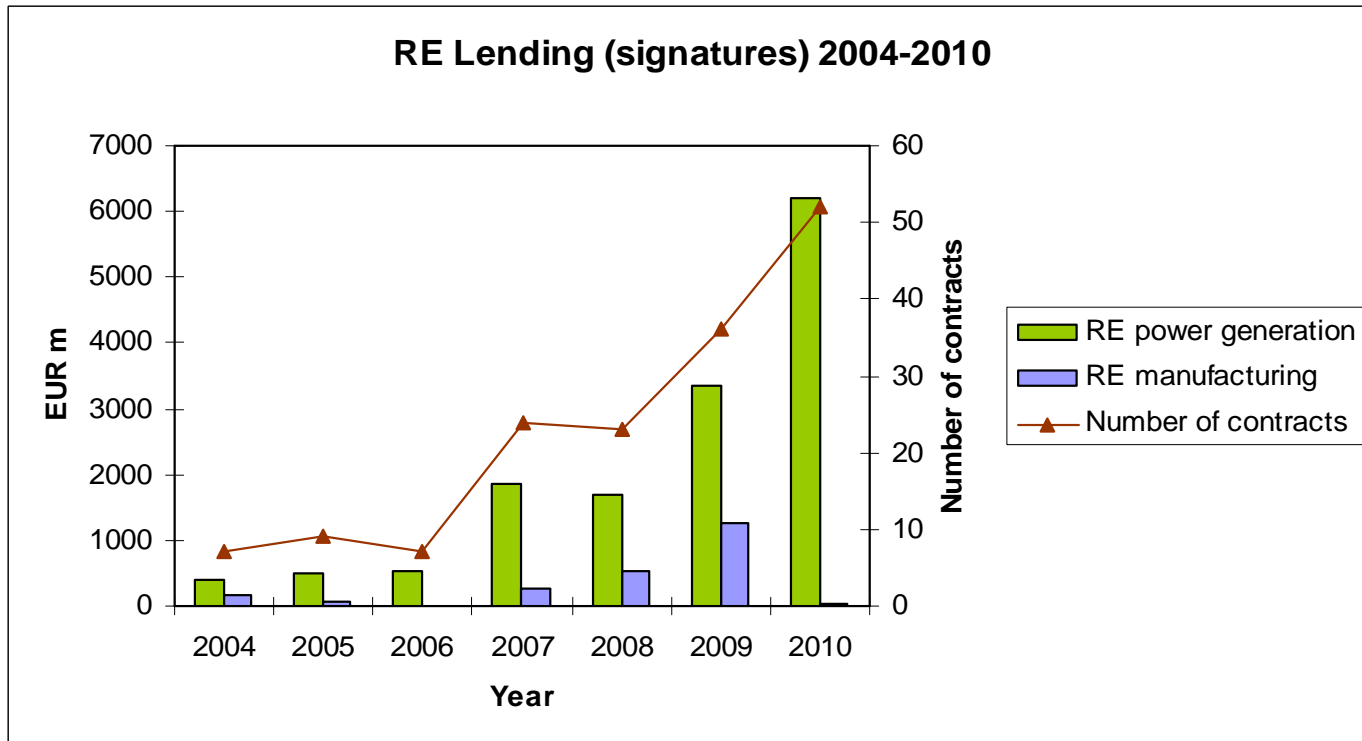
EIB Energy Lending 2010 by sector





EIB Renewable energy lending – some highlights

- High price volatility of oil&gas and heightened concerns in the nuclear industry make of RE investments a crucial component of energy security and sustained economic growth.





Renewables role in the new energy mix

Environment	<ul style="list-style-type: none">❖ No emissions❖ Key driver to reaching climate & energy goals
Energy security	<ul style="list-style-type: none">❖ Indigenous energy, inexhaustible resource❖ Reduces energy dependence❖ Reduces exposure to volatile prices
Competitiveness	<ul style="list-style-type: none">❖ Renewables as driver of industrial growth and job creation❖ Stable/predictable & increasingly competitive generation cost

Renewable energy is a key parameter for future development, growth and stability and part of the solution of the current global energy challenge



Financing Renewable Energy: 2010-2020



- ❖ Cost of funding: weak debt markets in EU, national budget deficits, increasing deficits
- ❖ Further reductions in FiT and other RE incentives in EU Member States
- ❖ Decreasing costs of RE technologies and equipment
- ❖ Innovation and R&D are critical
- ❖ Burdensome permitting processes (administrative, environmental licenses...) in some countries
- ❖ New financing mechanisms – project bonds for solar PV in Italy, debt funds, green bonds, etc.



EIB Lending to Energy Efficiency: a key priority

Energy efficiency has been **mainstreamed** across all projects:

- EIB finances the most energy efficient technologies
- Promoters are encouraged to adopt the highest energy efficiency standards

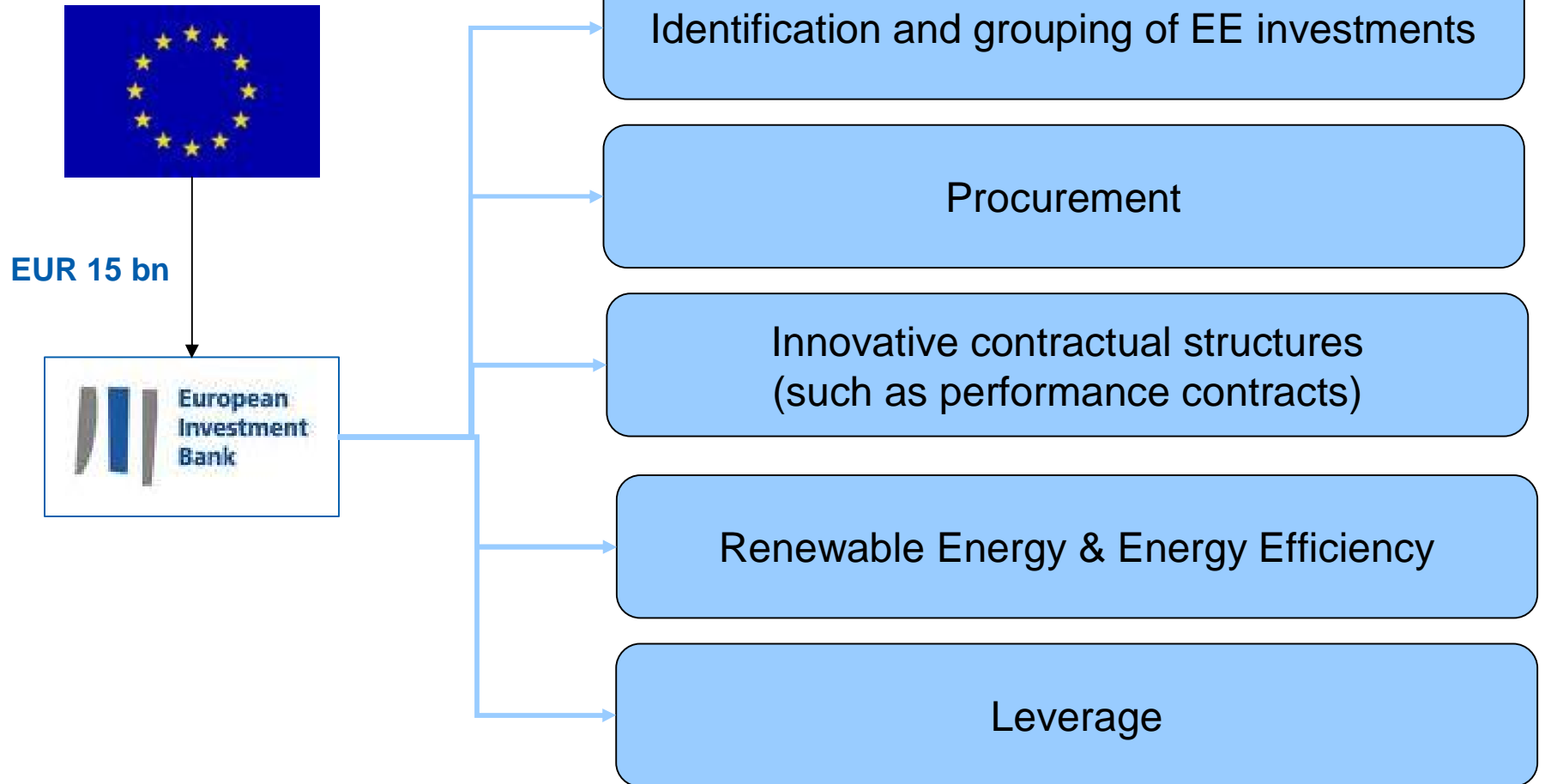
EIB specifically **targets energy efficiency projects**:

- Reductions to final energy consumption of ≥ 20 percent





European Local ENergy Assistance -- ELENA





European Local ENergy Assistance -- ELENA

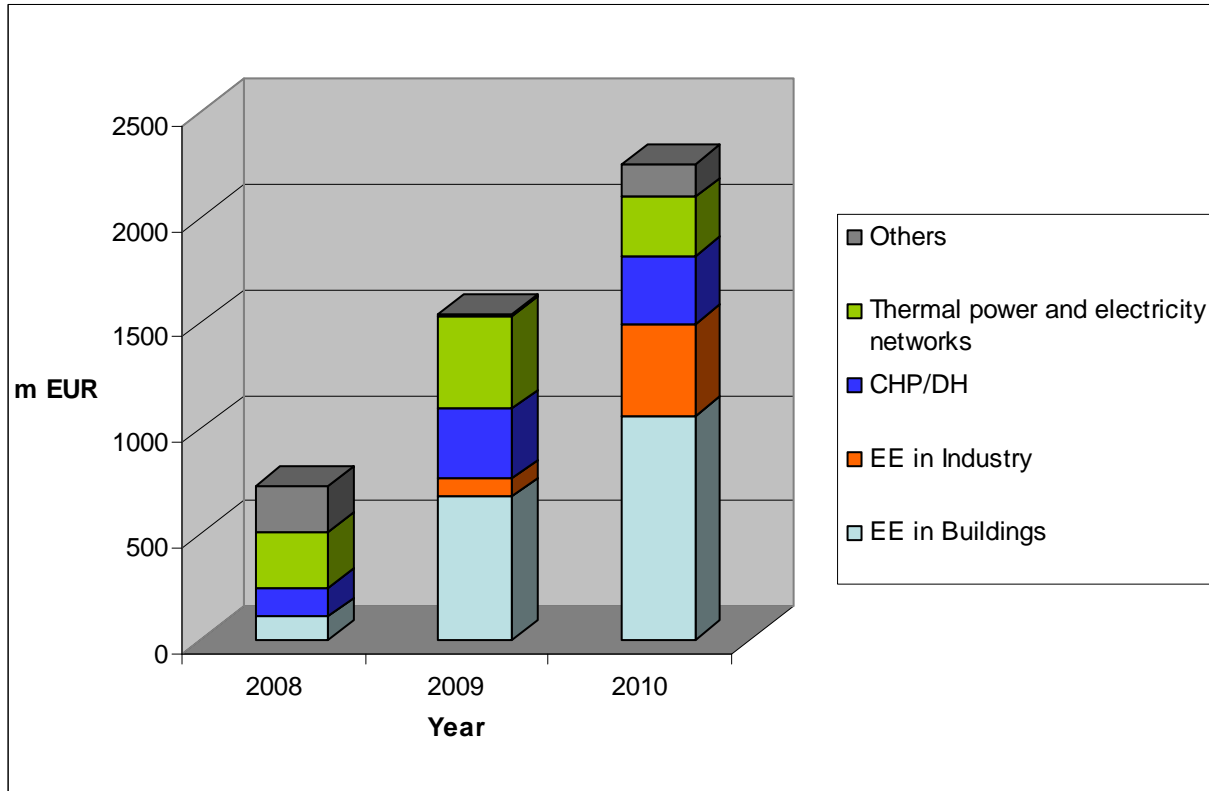


- ❖ EC-EIB cooperation to support local and regional authorities to reach 20-20-20 targets
- ❖ Technical Assistance facility: managed by EIB; funded by EU budget (CIP/IEE programme)
- ❖ Application to Energy Efficiency; local renewables; clean urban transport
- ❖ Market replication focus
- ❖ Investment leverage required (ratio 25)
- ❖ 90% funding rate (grant)
- ❖ Budget allocation 2009: 15 Mio €
 - ❖ Contribution agreement signed on December 15th 2009
- ❖ Budget allocation 2010 approved by MS: 15 Mio €
 - ❖ Contribution agreement signed on December 13th 2010
- ❖ Budget allocation 2011: 19 Mio €
 - ❖ Contribution agreement to be signed by end March 2011



EIB's EE lending 2008-2010

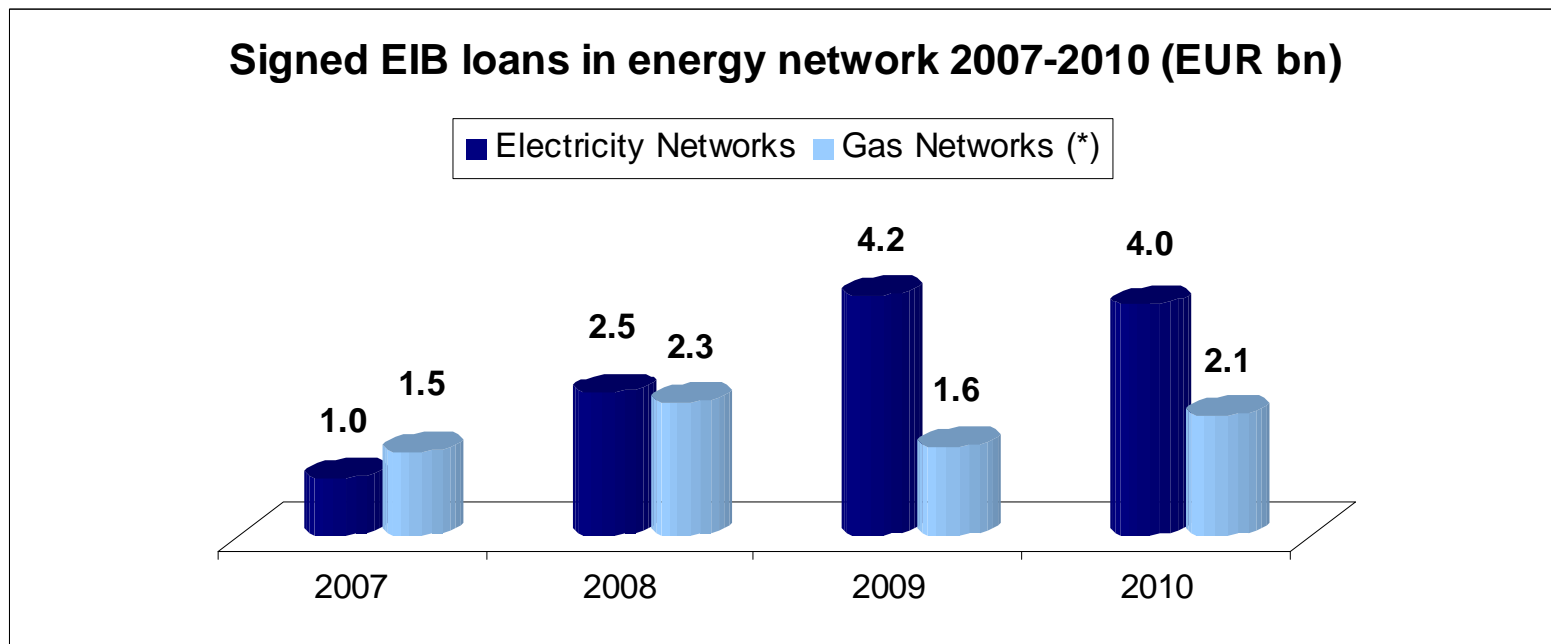
EUR 4.528m



Financing energy efficiency investments



- ❖ EE often part of other investments or cannot be physically separated from other objectives (production increase, quality, etc.)
- ❖ Other EE investments often small
- ❖ Difficulties to develop specific financial instruments: Identification of the energy efficiency “revenues”, contracts linked to energy performance
- ❖ It is often necessary to combine EE financing with technical assistance



(*) LNG and Storage included

- Financing of 83 projects/programmes, including 57 TEN-e, across 23 countries
- Cumulative EIB lending EUR 18.2 bn supporting a total investment of EUR 56 bn
- Recently strong positive impact of EEPR grants in accelerating the development of large interconnectors



- **Baltic Energy Market Interconnection Plan (BEMIP)**
 - EstLink II (Estonia-Finland, 650 MW, 325m € cost, 100m € EEPR) – 75m € signed 2010*
 - Fenno Skan II (Finland-Sweden, 800 MW, 310m € cost) – 150m € financed 2010*
 - NordBalt (Lithuania-Sweden, 700 MW, 550m € cost, 131m € EEPR) – 150m € loan due diligence**
 - LitPol (Lithuania-Poland) - preliminary contact**

- **South-Western Electricity interconnections**
 - HVDC IC France-Spain (2000 MW, 720m €, 225m € EEPR Grant) - 350m € approved 2010*

- **Smart Electricity Grids**
 - Digital meters, remote-control and automation estimated at 10% of finance of standard electricity distribution investment programmes – i.e. 900m € 2009-2010*
 - Large scale demonstration projects often too small in size for direct EIB loans and often benefit from large national and EU financial assistance already

* *Already signed EIB loans*

** *Under appraisal*

EIB activities – Priority Gas Projects



- **Nabucco Gas Pipeline**
 - 9 countries, first gas in 2017, FID 2011/12 – possible EIB €2bn loan**
 - Trans Caspian Pipeline initiative of the European Commission**

- **Ukraine gas transit rehabilitation programme**
 - Rehabilitation of gas transit pipelines and storages*
 - Ukraine sector reform progress
 - EC, World Bank, EBRD, EIB coordination

- **Medgaz Pipeline from Algeria to Spain**
 - 1bn € cost – EIB loan 500m €*
 - 8 bcm/a capacity; first gas 2011

- **Other security of supply projects**
 - LNG regasification terminals (Sagunto, Grain, Gate financed + Toscana + Baltic)*/**
 - Underground gas storages (DE, FR, UK, ES Castor, IT Edison + ...)*/**
 - Reinforcement of gas networks (AS, ES, HU, HR, IT, NL, SI, SK, UK + ...)*/**
 - Interconnections + reverse flow (Hungary-Croatia; Slovakia-Hungary + ...)*/**

- **Other projects**
 - Southern gas corridor, Poseidon, Tap have also approached the EIB

* *Already signed EIB loans*

** *Under appraisal*



Financing network investments: 2010-2020



- Remove non-financial obstacles: permitting.
- Regulation should provide incentives to invest.
- Core business of EIB to continue supporting priority EU energy network investment programmes – e.g. large ‘ticket size’; long tenors (within the constraints of the Bank’s risk bearing capacity).
- Complemented with more innovative instruments with EU:
 - Europe 2020 Project Bond Initiative – credit enhancement mechanism
 - Marguerite Fund – EU-27 equity fund
 - Risk Sharing Finance Facility (RSFF)



Conclusions



- The EU policy defines a transition path to a more sustainable, competitive and secure energy system (EU2020 Strategy)
- Substantial energy investments needed up to 2020 : new developments but also renovation of obsolete and aging infrastructures.
- Commission estimates investment needs until 2020 as follows:
 - Total energy investment needs: 1100bn €.
 - Out of which for power generation: 500 bn. € (incl. 400bn € RE).
 - Out of which 600bn for grids (gas and electricity)



Conclusions



- EIB finances substantial part of EU investment needs:

- Total annual investment needs 110bn €.
 - EIB-contribution in 2010: 18.1bn‡ € (16%).

- Annual investment needs for RE generation: 40bn €
 - EIB-contribution 6.1bn ‡ € (15%).

- Annual investment needs for grids: 60bn €
 - EIB-contribution: 6.7bn ‡ € (11%).

‡ Includes all EIB lending (individual loans, intermediated financing, infrastructure funds, etc.)