Financing the Transition Towards a Low-carbon Economy in the EU

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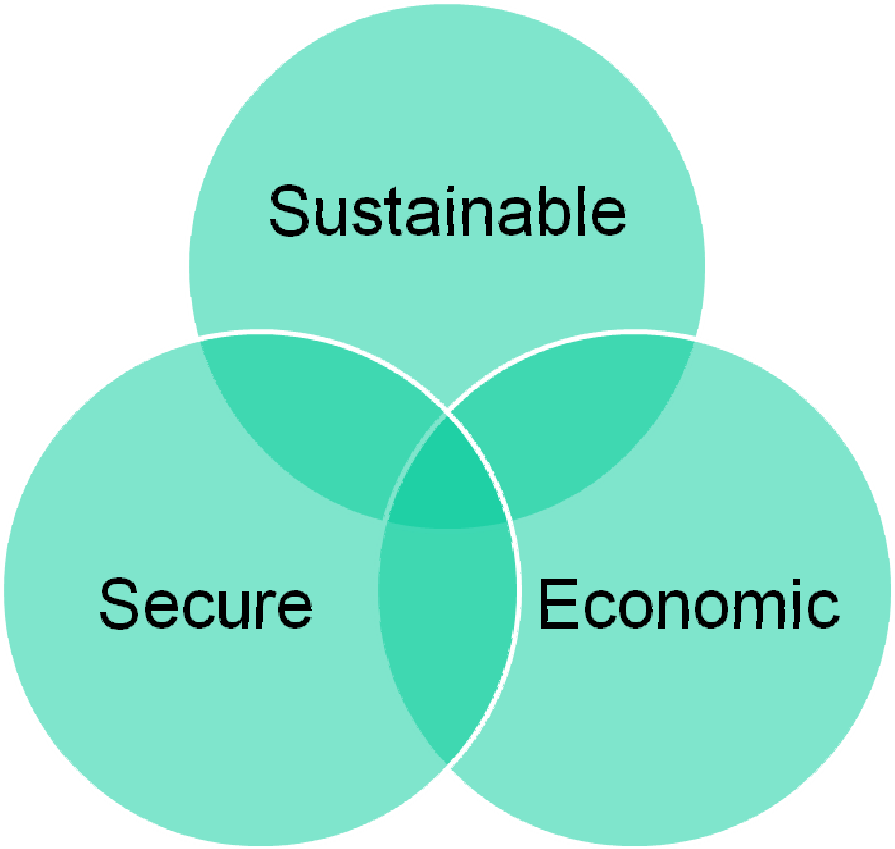
1. The current context is not favourable to low-carbon technologies

- From 2009/10, change in primary energy price trends
- Low coal prices
- Low CO2 prices
- Uncertainty on the policy and regulatory developments
- However, context looks favorable for Energy Efficiency (EE)

1.2. Competitiveness of key low-carbon technologies

- The CO2 price has to increase substantially in order for electricity from gas to be cheaper than electricity from coal
- If the cost of finance is low and a “reasonable” CO2 price is included, electricity from most mature renewables can be competitive with electricity from gas
- Energy efficiency and renewables for heat can be competitive with fossil fuel alternatives under a low CO2 price, provided that transaction costs are low

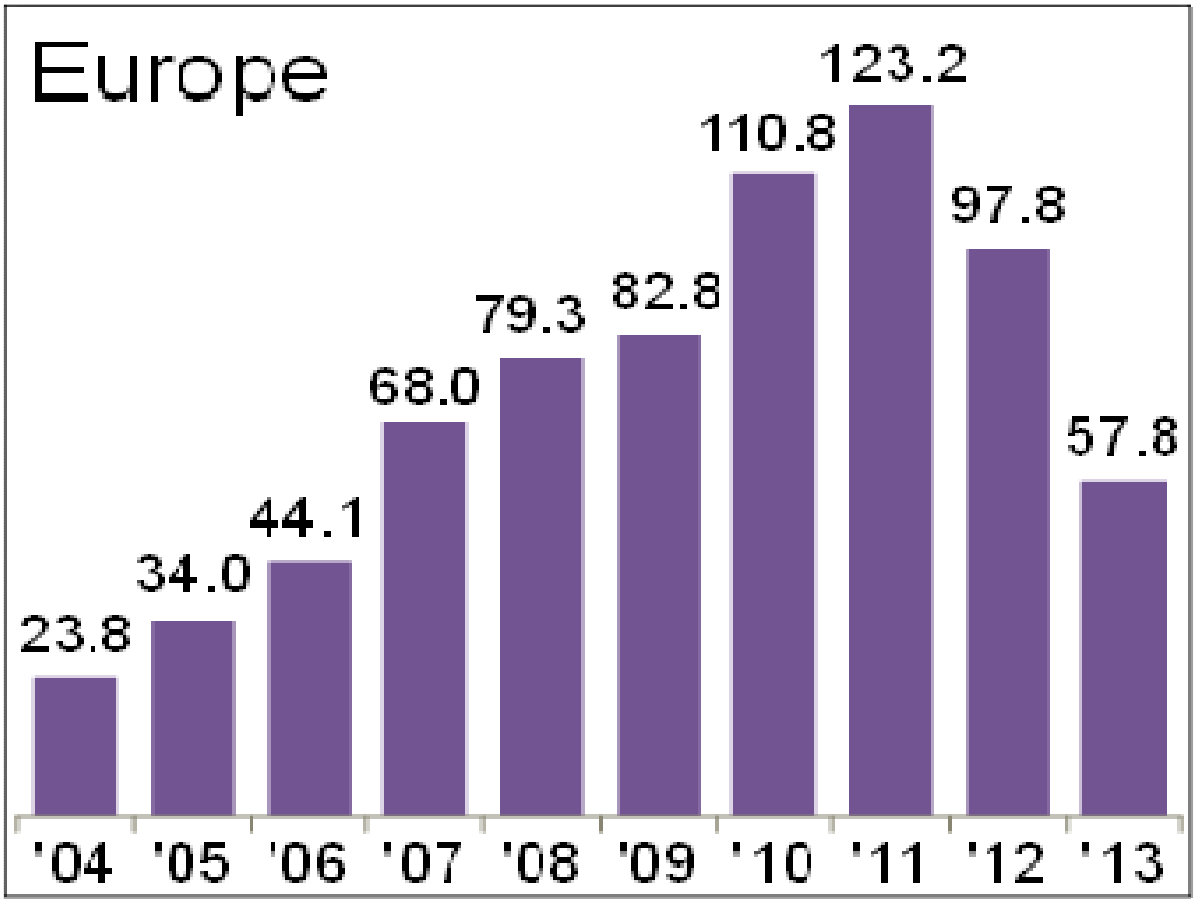
2. Dilemma between different objectives of the EU energy policy



3.1. Substantial decline of energy investments since 2010/11

- Based on the information available, energy investments increased substantially in 2005-2011, driven by renewable energy investments for power generation; thereafter, they substantially declined
- Data on energy efficiency investments are poorly known, but very likely they are significantly lower than energy sector investments

3.2. Renewable energy investments in bn USD (Bloomberg/NEF)



3.3. Lower investment needs than past forecasts

Energy infrastructure investment needs are less than initially expected, as EU energy demand has declined since the start of the economic crisis

- Overcapacities in the electricity sector
- Overcapacities in the gas sector
- Sharp decline of renewable energy investments

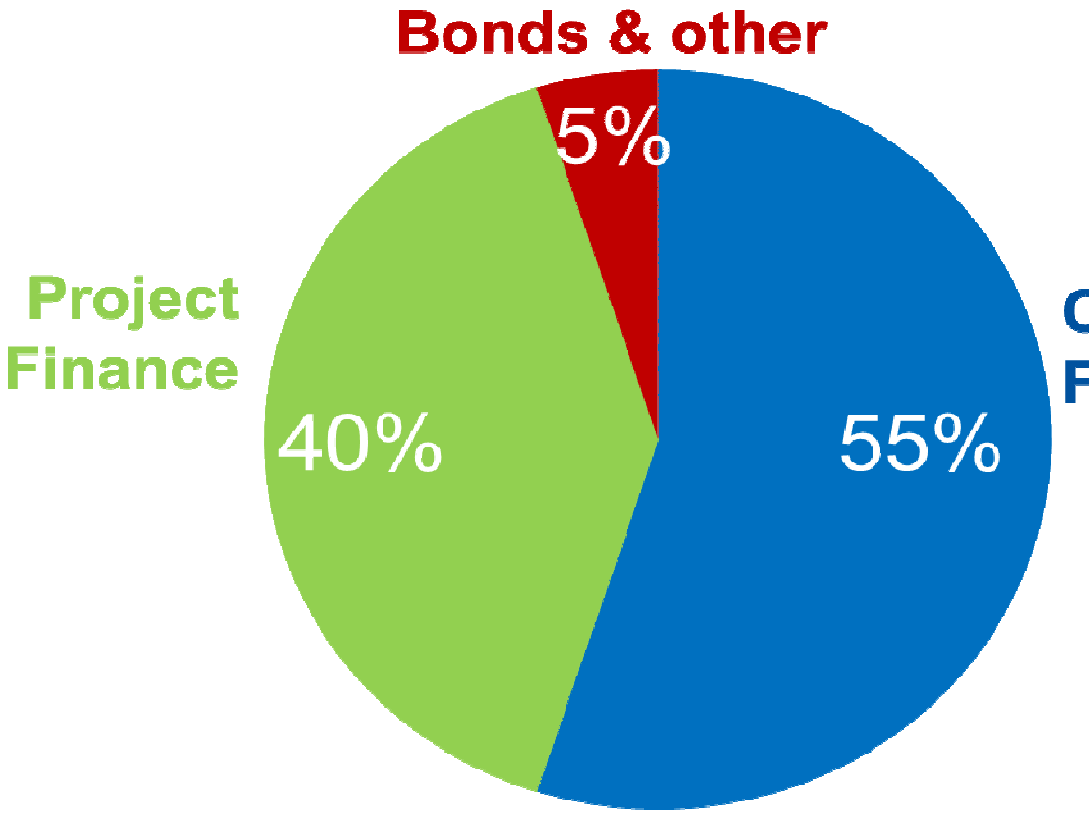
3.4. Investment needs in 2010-20 to reach objectives (from Commission studies)

- Mostly for RE, EE and energy networks
- Mainly related to the electricity sector
  - 50 bn/yr for RE (most likely lower today)
  - 60 bn/yr for energy networks – about 40 bn for electricity and 20 bn for gas (most likely lower today)
  - 25 bn/yr for replacement of fossil power stations , nuclear and other
- 85 bn/yr for EE (60 bn for buildings): high potential to expand, as current investments are substantially lower than needs

4.1. How EU energy investments are financed today?

- Mainly private financing
- Limited information on financing of EE, but, mostly based on self-financing/equity and public subsidies
- RE : Mostly via corporate financing and project financing
- Networks : mostly via corporate financing and very little project financing

4.2. Financing of RE at world level (Bloomberg/NEF)



4.3. Issues to finance future investments? (1)

- Lower investments in energy infrastructures facilitate financing
- The developments of the energy/climate change policies in some countries are not clear
- RE regulatory uncertainty in some countries – regulations should facilitate and lower the cost of finance
- Policy/regulation support for priority energy network investments
- Policy action to support EE investments

4.4. Issues to finance future investments? (2)

- Corporate finance is constrained, particularly from electricity companies
- Limited public budgets
- As a result of the reform of banking rules long-term financing might become more expensive and less available
- Role of new players to finance energy infrastructures, such as institutional investors
- Developing EE investments will imply mobilizing private financing from relatively new players: households, ESCOs or energy companies

4.5. Impact of the crisis on the electricity sector (based on The Crisis of the European Electricity System, Commisssariat général à la stratégie et à la prospective, 2014)

Figure 4 – Return on capital employed (ROCE) and weighted average cost of capital (WACC) for 10 largest European utilities (2007-2012)

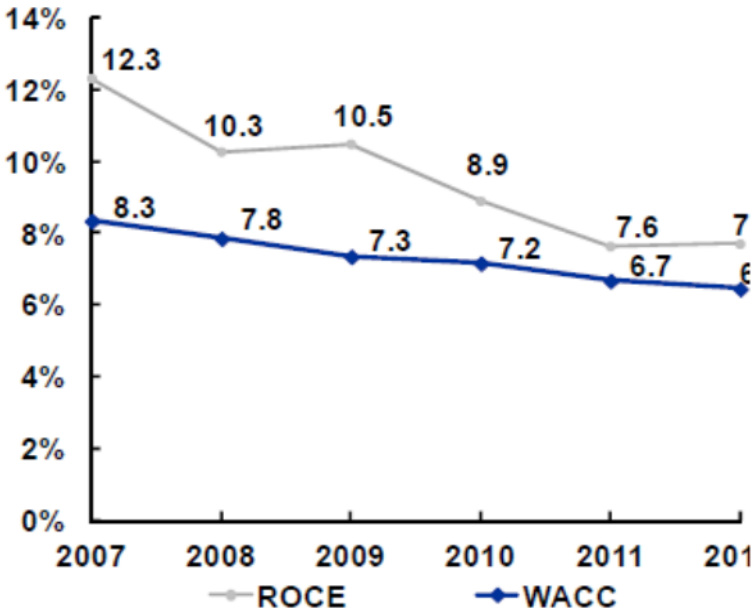
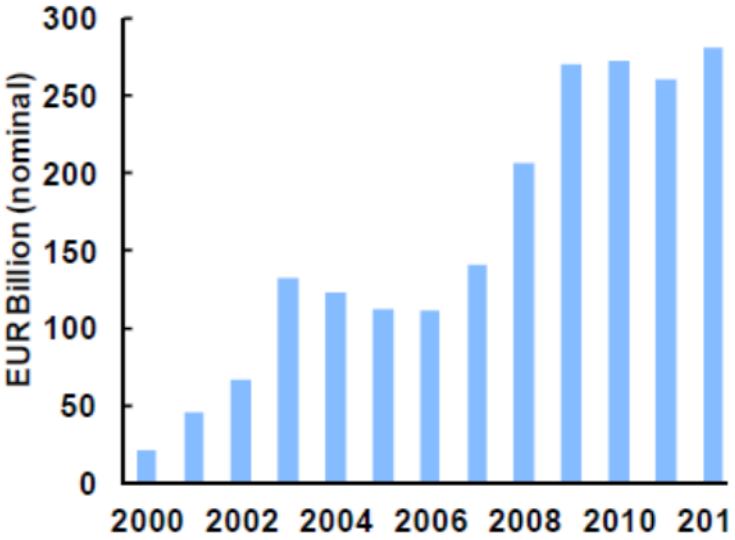


Figure 5 – Net debt evolution of 10 largest European utilities (billion Euros)



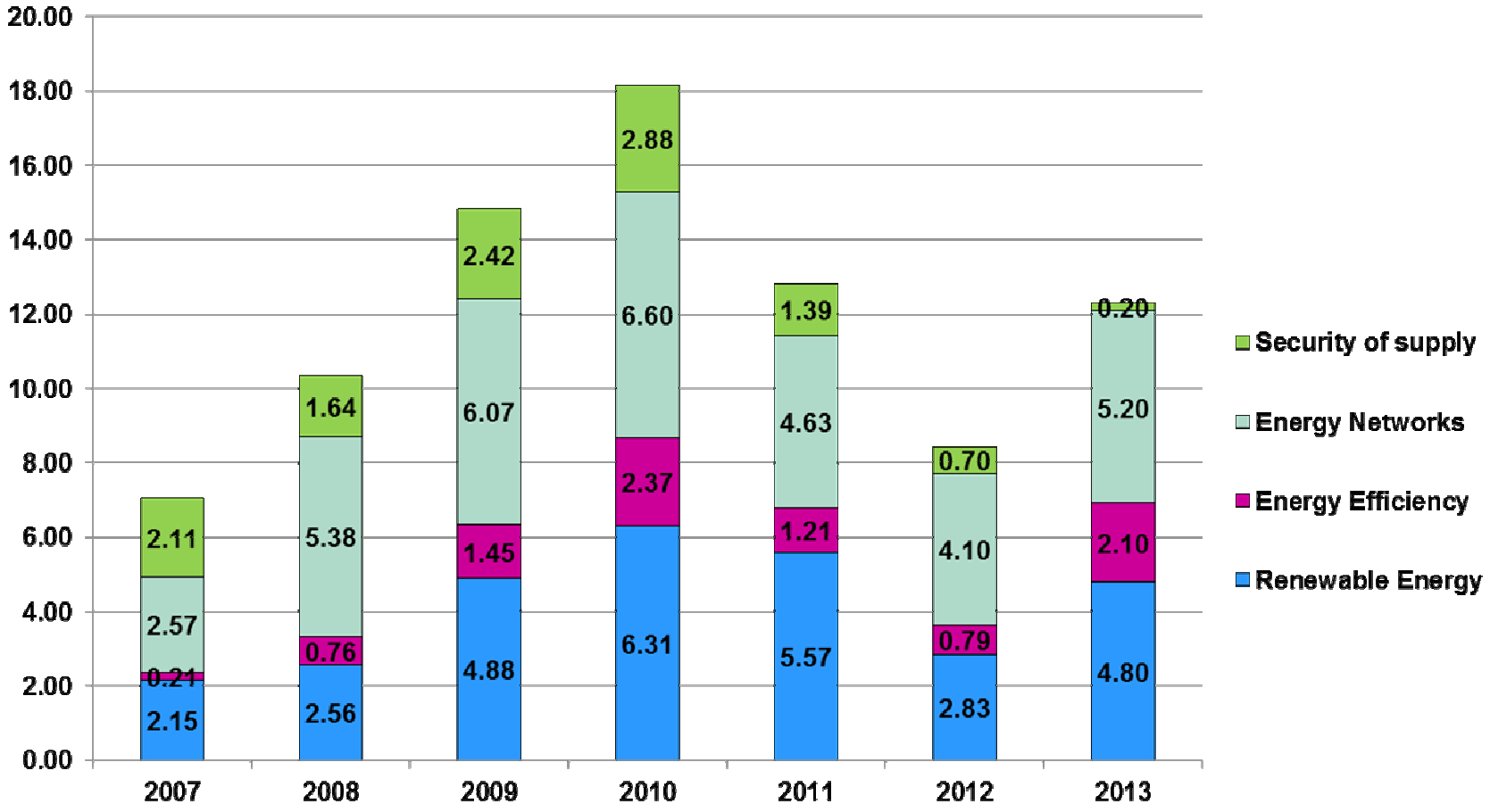
Source: IHS CERA 2012 European Policy Dialogue final report

4.6. Policy action is needed to develop fast EE investments

- Develop technical and management capacity to prepare large and efficient EE programmes
- Increase availability of public funds
- Develop experience in Financial Instruments to support EE projects
- Develop examples of good practice (the successful implementation of first projects is critical)

Knowledge transfer, based on actual projects, is necessary at EU level

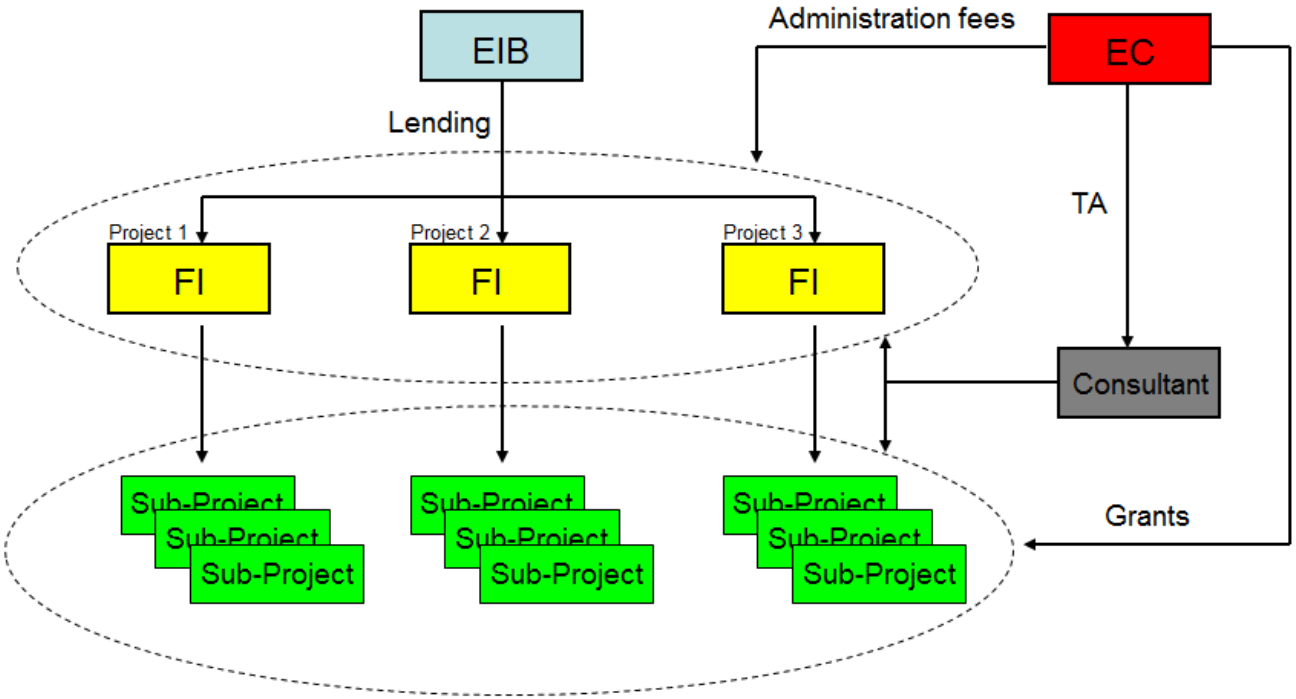
5.1. EIB financing of energy investments



5.2. EIB new Energy Review published in July 2013

- EIB's Energy Screening and Assessment Criteria have been published in our website (www.eib.org):
  - Detailed criteria for the different type of investments
  - All fossil fuel power plants financed by the EIB meet an Emissions Performance Standard for CO2
- Focus of EIB financing: EE, RE and energy networks:
  - Provision of long term finance: senior loans to equity
  - Advisory services: TA and financial products. Examples: Elena, Jaspers, Jessica, Deep Green, etc.

5.3. Example: Framework Loans for small EE&RE (several EIB operations follow this approach, notable to finance the private sector)



6. Possible issues for discussion

- Misalignment between economic signals and policy priorities for low-carbon technologies
- How to increase energy investments in the EU, particularly EE investments
- Efficient and effective use of public funds to support priority projects
- Facilitate access to financing for priority projects