Energy Infrastructure Forum – Financing Session

European Commission – DG Energy Discussion Paper – Investment framework

Current EU financing for energy (see Annex I) constitutes a small fraction of the projected yearly investment needs for the next 15 years, which ought to come predominantly from private funds, but needs increased financial support from the EU and Member States. In the context of the "Clean energy for all Europeans" package in alignment with COP21, it was noted that the Commission would take short and medium term actions to further trigger private and public investments. DG ENER regularly highlights the "funding gap" for energy investment.

A central aim of EU energy policy over time has been to enable a more stable regulatory framework across the Member States in order to enhance investment. The landmark third energy package unbundled energy suppliers from network operators with a view to allow new entries into the market and encourage competition. This has been vital in creating a competitive market of energy suppliers for consumer to choose from and in allowing a vibrant renewable energy industry to develop with developers competing for contracts and all having access to the grid. This was of course further enhanced by the Renewable Energy Directive which provided long term investor certainty in the sector. This approach has continued with the Clean Energy Package, setting up the framework for 2030 with a strong and transparent governance framework.

Similarly, the TEN-E Regulation aimed to stabilise the framework for developing infrastructure projects by e.g. enforcing a maximum period of three years for permitting. The Clean Energy Package furthermore provides new opportunities for the electricity transmission sector in particular, encouraging a shift towards the electrification of transport, which will create new demand for electricity, and by extension, transmission infrastructure.

What are the investment needs and challenges?

Investment needs in the EU energy sector in order to enable a transition to a low carbon economy are huge. European Commission estimates have put the total figure at 4.12 trillion. For transmission, a new study estimated that EUR 200bn of investment is needed in electricity transmission and EUR 20bn in electricity storage. Up to EUR 80bn is estimated to be needed in gas infrastructure up until 2030.

A part of this investment will have to be financed by public sources (national and EU) with the EIB also contributing to most policy priorities. However the most substantial portion will need to be invested by the private sector. COP 21 commitments have also increased the global investments requirements in this sector.

Traditionally, financing of the energy sector and energy transition in Europe has been performed by the banking system. Capital market financing has increased for certain types of projects in recent years but huge potential is signalled by institutional investors who wish to increase their exposure to infrastructure assets. The Capital Markets Union explicitly aims to facilitate the attractiveness of infrastructure as an asset class.

There is substantial experience in the **renewables sector** in attracting private finance and financial innovation. Electricity generation for renewable energy has seen significant growth in private finance during the last decade. This has in part been due to programmes of public subsidy and binding targets, however financing options in the sector have been more flexible. Project finance is regularly employed with developers using a combination of debt and equity. Re-financing post construction is also

common adding liquidity to the market and giving the opportunity to investors with diverse risk appetite to engage. Nevertheless a significant financing effort remains if the EU is to reach its 2030 and 2050 targets in renewables.

In the **energy efficiency sector** the European Commission is working with the financial sector to bring in new institutional investors such as pension funds by, for example, working on standardised legal contracts, underwriting processes, measurement, verification and reporting requirements in order to reduce transaction costs and facilitate the bundling of investments for issue to the bond market. Equally the mainstreaming of energy efficiency requirements in the mortgage market are essential is Europe is to achieve its 30% EE objectives for 2030. A successful initiative has been launched with the European Mortgage Federation which aims to aims to create a standardised "energy efficient mortgage" based on preferential interest rates for energy efficient homes and/or additional funds for retrofitting homes at the time of purchase.

The final investment need in the **electricity transmission sector** is inextricably linked to the outcomes of renewable energy and energy efficiency. The high levels of renewables required to meet our climate commitments has led to some predictions for a need to quadruple transmission capacity. The final take-up of other technologies such as electricity storage, power to gas, demand response and back-up generation will also contribute to the overall balancing of variable renewable power which will impact the eventual transmission needs. New players entering the transmission and distribution markets (e.g. in smart distribution and in the delivery of offshore transmission to offshore wind farms) could help to increase competition and drive down costs. Furthermore, policy measures included in the market design package – more efficient methods for capacity allocation and optimising the bidding zone configuration – will have an impact by making more existing capacity available for electricity trade.

Investments in the **gas transmission sector** to ensure security of supply and diversification are taking place and the EU gas grid is expected to be largely completed in the next years; Member States will be able to access two if not three sources of gas. Further investments will be very much driven by depletion of domestic sources, new discoveries and the need to pursue diversification. Investors and instruments may therefore be needed that can address substantial investment volumes and uncertainty of demand.

Meeting the investment challenge in the transmission sector is being assisted by CEF as well as substantial funding options from ESIF[1] and the EEPR[2]. The EIB has furthermore been available to provide loans and EFSI is now gaining traction with transmission infrastructure projects. TSOs traditionally rely heavily on regulated income from tariffs on consumer bills. However, in order to leverage sufficient investment volumes to cover the costs of the transition, upscaling private sector investment will be vital

Overall it is crucial that we have the capacity to invest in transmission in order to meet the needs of the market as they arise, and that the important role that transmission will play in enabling the energy transition is recognised and reflected in the regulatory framework.

<u>Questions for discussion</u>

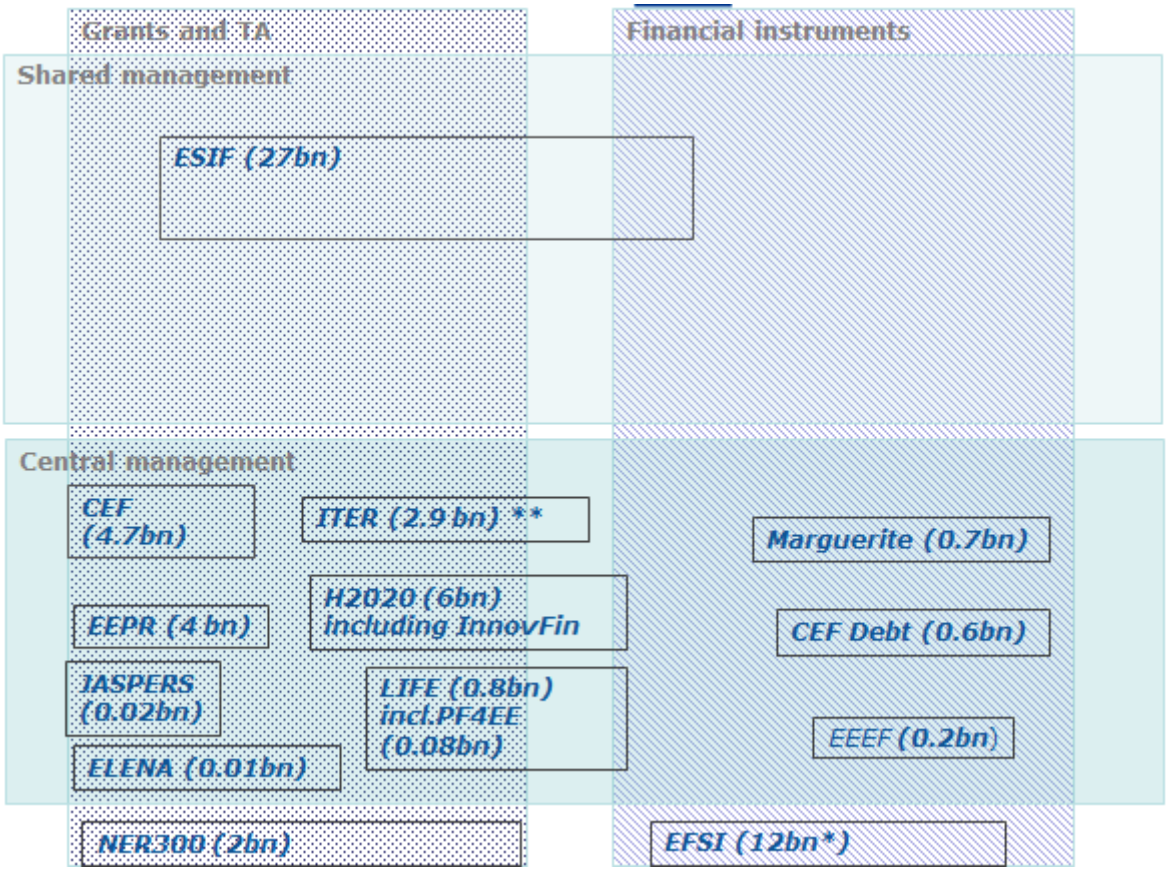
1. What more could or should be done to facilitate integrated projects, in which transmission and generation are developed in complementarity, and within the limits of EU unbundling rules?

[1] European Structural Investment funds
[2] European Energy Programme for Recovery

2. What is the success story in RES? How have costs / including investment costs gone down?
3. What is the role of technology investors in RES success? Did RES projects tap a different investor base than traditional energy investors?
4. How are bond markets developing? Is the Green Bond market relevant for the energy transition or is it still a small niche market?
5. What experiences can TSOs share on their investment strategies and approach to regulation?
6. How do institutional investors perceive TSOs as an investment opportunity pre and post energy transition?
7. TSOs have traditionally financed their investments on a corporate basis. Given their high leverage / debt ratios (in some instances) would it make sense to structure certain investments on a project finance basis? What does the finance community / institutional investors think? Would there be appetite given the (new) regulatory framework?
8. What more can be done to encourage best practice exchange and the more wide-spread adoption of regulatory tools that facilitate much needed investment?
9. What more needs to be done to ensure that the investment needs proposed by TSOs also take into account the existing cross-border capacity and ensures that it is used efficiently?

Annex I: The structure of current EU funding of Energy

Under the current MFF (2014-2020) the EU financing to the energy sector is spread across a number of programmes and instruments which vary by targeted sectors, legal base, the budgetary management mode (central/shared management), scheme size, intervention logic and intervention tool (grants/financial instruments/technical assistance). The structure of financing that underpins this strategy emerged from a 'bottom-up' process over-time. This fragmented approach creates scope for synergies across sectors, but can make it challenging to ensure coherent energy policy implementation. The overall level of EU spending in the energy sector over the main programmes and instruments is in the order of € 52bn (2014-2020, divided between grants and technical assistance actions of approximately €38.5bn, and financial instruments of approximately €13.5bn).



* The EFSI figure on the graph is only based on an initial assumption that three years of the EFSI guarantee allocation for infrastructure is at the level as its first year. The actual approved amount for the energy sector from the EFSI IIW as of 31/12/2016 is € 7.7bn.
** ITER: grant and procurement
Note that EEPR is a legacy program from MFF 2007-2013 with ongoing project implementation

The structure of the EU spending in Energy includes six key sources of financing:

- **European Structural and Investment Funds (ESIF):**
  - the largest source of EU financing in the field of energy: €27bn (€29bn including cohesion funds). Expanded energy expenditure may be constrained by current rules that prohibit Funds to ETS sectors (eg. low-carbon generation) (see Annex II);
  - indirect (not centrally managed), horizontal instrument, mostly grants (though blending with financial instruments possible).

- **Horizon 2020 (H2020)**:
  - €5.69bn under Secure, Clean and Efficient Energy Challenge for non-nuclear energy research and innovation; other "challenges" include other energy relevant funding
  - Horizontal research and innovation programme (with 35% climate mainstreaming)
  - Centrally managed (for energy: INEA and EASME under supervision of RTD and ENER) grants , with a few financial instruments (implemented by the EIB)

- **Connecting Europe Facility (CEF):**
  - €5.35bn for Energy – including CEF debt (€1.6bn allocated so far in co-financing to energy infrastructure);
  - CEF is a common instrument to support the trans-European networks (energy, transport and telecommunications) established under the 2014-2020 MFF, centrally managed through an executive agency (INEA) chiefly for grants (financial instruments budget mostly moved to EFSI).

- **European Energy Programme for Recovery (EEPR)**
  - €4bn for gas and electricity infrastructure, offshore wind energy, carbon capture and storage and to set up a European Energy Efficiency Fund (EEEF).
  - The EEPR was a one-off instrument (for 2007-2013) in response to the financial crisis (a small macroeconomic stimulus preceding Juncker Plan/EFSI thinking).

- **European Fund for Strategic Investments (EFSI)**
  - €7.7bn of EFSI financing for the Infrastructure and Innovation Window (IIW) for energy projects so far (mainly RES, EE and smart grids) to trigger around €36bn overall energy investment. Total EFSI energy financing exceeds the €7.7bn, since the SME Window also supports energy investments through SME projects.
  - Horizontal instrument with shared management with EIB and EIF; offers a variety of financial instruments

- **ITER and nuclear decommissioning assistance**
  - The ITER construction budget is approximately €2.9bn (2013 value); decommissioning finance almost €1bn.

The EU budget contains further financing for energy (eg also through European Rural Funds), Further sources include:

- €2.9bn from the European Agricultural Fund for Rural Development
- €1.1bn European Social Fund contribution allocated to the thematic objective "Supporting the shift to a low-carbon, resource efficient economy"
- Pilot initiatives 'Project Finance for Energy Efficiency' (PF4EE - €80m), European Energy Efficiency Fund (EEEF - €265m of total commitment).

Additional money for energy related investment had made available outside the EU budget via the NER300 programme: the revenue from the sale of € 300 million CO2 certificates under the ETS was available for co-funding for CCS and innovative renewable energy projects.