RTE’s answer to the European Investment Bank’s consultation on the review of its Energy Sector Lending Policy

Introduction

RTE is pleased to respond to the European Investment Bank’s consultation aiming at reviewing its Energy Sector Lending Policy. RTE is the operator of the French electricity transmission system. RTE is responsible for operating, maintaining and developing the high and extra high voltage network. It guarantees the reliability and proper operation of the power network. As the operator of the French electricity transmission system, RTE is involved in the implementation of EU energy policies and market developments. For example, RTE and REE, the Spanish transmission system operator, are shareholders of INELFE, a mixed-capital corporation, which purpose is to build a new electrical interconnection between France and Spain. This interconnection will increase the electrical system reliability and the quality of supply for both countries. This project is co-financed by RTE, REE, the European Union and the European Investment Bank. Regarding this previous financing experience, RTE shares the interest of the European Investment Bank on the issues raised by the consultation. We would therefore be pleased to discuss the elements developed in this response to the European Investment Bank’s consultation in the near future.

General energy and economic context:

How does investment in the energy sector contribute to growth and employment? Are investments in all energy sub-sectors equally valuable? And how does investment in the energy sector rank relative to other investments in the economy which support growth and employment?

From a global perspective investments in the energy sector are keys in ensuring growth and employment. Investments in transmission assets are of particular interest since they provide for a better European market integration and an improved security of supply. Transmission assets can drive generation cost down and make prices converge in Europe.

The European 10-Year Network Development Plan issued by ENTSO-E in 2012 (TYNDP2012) estimates that transmission projects of pan European significance will help alleviate total generation operational costs by about 5%.

Considering the more direct effects, investments in transmission grids create direct value for the European economy. RTE’s projects and activities induce employment for the European industry and SMEs having a direct contractual relationship with RTE in France.

What impact do you consider the current economic crisis will have on the energy sector (demand, policies, supply)?

On the short run, the current economic crisis is drawing down the demand in the industrial sector and, to a certain extent, in the services sector. Domestic demand is more resilient.

On the long run, RTE assumes that the EU will recover a 1.8% / 2% increase of GDP (year on year) with an electricity demand mainly driven by energy efficiency measures and policies.
**Renewable energy:**

What level of investment in RE do you expect in the short and medium term?

In 2017, RTE expects wind capacities to reach 11.5 GW and solar capacities to reach 5.6 GW in France. In 2030, depending on the policies adopted, those figures reach between 20 GW and 40 GW for wind and between 12 GW and 30 GW for PV.

TYNDP2012 states that in Europe, in the coming decade, the net generating RES capacity will increase by about 220 GW. It also states that about 80% of the projects will contribute to RES integration.

**Security of supply:**

Is the traditional model for electricity transmission and distribution changing? What implications does this have for future investments in electricity networks?

The traditional model for networks is changing with the integration in the grid of massive RES generation. It has some major consequences since it implies to finance significant reinforcements. New technologies are being developed, whether it is offshore or onshore. Several new HVDC lines are foreseen, whether it is inside France or between France and its neighbours.

RTE estimates that those investments can represent between 35 and 50 billions € towards 2030 for the French system.

What is the future role of smart grids, offshore grids and energy storage solutions?

Key drivers for smart grids are the massive integration of renewable energy sources and the development of new services at the consumer level to make him an active player in the system. Thus, smart grids projects aim at finding new flexibilities means at all levels (generation/grid/consumption) and at all geographical scales (regional/national/european). Smart grids’ role is to find the best technological and economic solutions to reach the 20/20/20 objectives.

Off-shore grids will have two roles: first, connect the off-shore windparks to the continent, secondly reinforce the interconnections between the European countries along the seas. It will enable the optimization of renewables at the European level, for instance wind resources and hydro resources. Further studies must be carried out to give relevant figures about the costs and benefits of these new grids.

Energy storage solutions such as large hydro capacities have proved to be very efficient in the electric system for a long time. It is not the case for new devices, such as batteries. Technically and economically speaking, the models are still to be found. That is why a lot of pilot projects are launched to assess all these key points and to identify the situations where these new storage solutions are relevant. So the future of storage is unknown in that sense.

**R&D:**

Which are the key innovative energy technologies under development? The development of which key innovative low-carbon energy technologies should receive most financial support?

For European electricity system development, the key innovative energy technologies under development in Europe can be classified into 3 categories:

- “New” low-carbon production units and more especially renewable generators (onshore & offshore wind, solar, ocean/sea...). For these technologies, research
activities needs to be concentrated on improvement of energy production (increase efficiency, reduce costs) and improvement of the interface with electricity system (better ability to operate under network contingencies, to be controllable and to deliver ancillary services in order to increase the possibilities to incorporate large amounts of renewable generators in the European system).

- **Network infrastructure technologies such as smart grid infrastructures for distribution & transmission systems** (technologies allowing to optimize the asset usage and to operate the system with increasing penetration of new type of generators: improvement of observability, resilience, controllability ...). These technologies include new type of network assets (protections, sensors, HVDC grids, control centers and associated IT systems).

- **Demand flexibility with technologies permitting to increase the possibilities for the demand** (industrial, commercial, residential load) to be flexible and to react depending on the European system state. Energy efficiency technologies are another field for reduction of energy but also reduction of power.

*Should financial support be spread across a large number of small research projects or be selective and concentrated on a few promising large research projects?*

Many technologies are under development and RTE considers that it is better to spread the financial support among a portfolio of projects following a research plan for each sector (such as SET Plan research projects).

Considering the innovation process and the risks associated with such projects, it is important to be able to launch quickly new projects and to identify stopping points in order to be able to stop the research if the results are not sufficient or at the opposite to give additional funds.

**Criteria regarding energy network projects:**

RTE considers that the contribution of European Investment Bank should not be restricted to Projects of Common Interest since those projects are only a small part of transmission projects that contribute to meet EU energy policy goals. For instance, some projects that contribute to the development of the EU market (e.g. “upward” network projects bringing power to allow the construction of efficient interconnectors) are not labelled as PCI.

**Criteria regarding R&D projects:**

The criteria seem appropriate except that there should also be a space for small (in terms of funds) initial projects that aims at better characterizing one innovative technology. Such projects can lead to additional projects, with more funds and better characterization in terms of soundness (criteria 2). The interest for such initial projects is that they can lead to breakthrough without too many risks. By only keeping sound & detailed projects, funds are used to finance projects in a continuous amelioration process but not in a more innovative process.