Public consultation on EIB’s Energy Lending Policy

Dear Ladies and Gentlemen,

Please find below Dii’s feedback on EIB’s Lending Policy. We appreciate the consultation process and would like to stay in touch with you on your Energy Lending Policy. Dii also seeks for further collaboration for our next Desertec Reference projects.

In case you have any questions, please do not hesitate to contact us.

Best regards

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Dii’s position on the questions of the public consultation

Particularly in the current economic climate, is there a trade-off between promoting a competitive and secure energy supply and one which is environmentally sustainable?

Dii has analyzed this question in its long-term study "Desert Power 2050 – Perspectives on a Sustainable Power System for EUMENA". At first sight a power system with unlimited carbon emissions seems to show such a trade-off: Environmentally sustainable power would be more expensive than power based on fossil fuels. However, this is a very limited view on the topic, mainly for 4 reasons:

1. The EU has CO2 mitigation goals that should not be abandoned.
2. External cost of CO2 is not perfectly reflected in the power sector. Unlimited carbon emissions would cause high additional cost for many other sectors of the economy due to climate change. Such cost is not reflected in a limited analysis of the power sector.
3. The current cost advantages of fossil fuels highly depend on the price of coal and gas. An increase in oil and gas prices could easily reverse that advantage.
4. By using “cheap” fossil fuels the trade-off between the price of the system and its security remains. The dependence on fuel imports in the EU would rather increase and hence energy security decreases.

Therefore, Dii is promoting a system that follows the EU carbon emission targets. For such a system the trade-off does not exist anymore. An environmentally sustainable power system is the cheapest in the long-run. This is especially true, if it is integrated across EU and MENA. According to Dii’s study, an integrated EUMENA electricity system has cost savings of € 33.5bn p.a. Besides, an EUMENA power system also contributes to security of supply. Reliance on fossil fuels and their volatile price development decreases and the system leads to a more diversified power supply for all countries. Such closer cooperation between the
EU and it neighbor countries is very much in line with the EU Neighborhood policies.
For more details the study "Desert Power 2050 – Perspectives on a Sustainable Power System for EUMENA” is available by following this link:
http://www.dii-eumena.com/desert-power-2050.html

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

Dii observes significant changes in the availability of capital for renewable energy projects in the current economic crises:

1. High pressure on government budgets have led to strong decreases and repeating changes in RE support schemes. Both factors have diminished the appetite of investors for RE projects and increased the required risk premiums.

2. Stronger regulation (Basel III) and reduced long-term liquidity in the market have caused a retreat of many banks in the sector. Their capacity and appetite to lend long-term, which is important for RE projects, has decreased. Further, interest rates for comparable investments (long-term treasury bonds) have gone up, especially in southern European countries.

3. New investors, like insurance or pension funds are not yet comfortable enough with RE projects. Their appetite to lend is also depending on regulation (Solvency II), which seems not favorable enough for long-term investments in RE projects.

As a result investments in energy projects have become increasingly difficult. This is in contrast the huge investments that are necessary to achieve the EU goals

• on climate change,
the transformation of the energy system and its integration across Europe and its neighboring countries.

Therefore, there is a gap between investors’ appetite and necessary investments. IFI like EIB can mitigate that gap but private investment has to remain dominant to source the large investments necessary.

Potential solutions are:

- Clear, stable and supporting energy policies for RE. For Wind and PV the market integration has to be encouraged. For CSP and other emerging RE further support is necessary.
- RE policies have to be aligned with other policy sectors that influence investment decisions (e.g. fin. Regulation Basel III; Solvency II, fiscal, educational etc.).
- Other instruments, such as funds and other risk mitigation tools, have to be easily accessible and investors have to become more familiar with their availability.
- The securitization market could help to structure RE projects in a way that a larger group of investors has access to RE investments.

The Bank’s economic justification for supporting emerging renewable energy technologies, whose cost is significantly above that of conventional and mature renewable energy technologies, is that continued investments in these technologies will eventually lead to cost reductions and will ultimately be the least-cost approach to meeting the EU’s renewable energy targets. Do you agree with this approach? Is there an alternative approach to the economic justification of these technologies which you consider more appropriate?

Dii fully agrees with this approach. Dii’s long-term cost analyses show further cost decreases for all RE technologies.
What evidence is there that the cost of emerging renewable technology is falling?

What is meant by emerging renewable energy technologies? Dii focuses mainly on Wind, PV and CSP. Nevertheless, Dii acknowledges that also other emerging RE technologies can play their role in the future energy mix.

Dii analyzes cost developments from two perspectives. First, a top-down approach based on learning rates and capacity additions is assumed. Second, a bottom-up approach is used to analyze the technical cost decrease potential for each major component:

@ Wind
Dii expects major cost decreases in the following areas.

- Rotor
  - Modifications in blade-design and swept area
  - New materials increase stress capabilities and reduce weight
- Nacelle
  - Changes in drive train technology
  - Superconductor technology
- Tower
  - Replacing expensive steel by other materials (e.g. concrete)

Dii expects CAPEX of 900 €/kWe by 2050 for wind-onshore. For off-shore CAPEX of 1,340 €/kWe are expected by 2050.

@ PV
The PV market has experience dramatic price decreases over the last years. Dii expects this to continue at lower rates. Major drivers for further cost decreases are seen in:

- Module
  - Efficiency
- Balance of system
  - Module efficiency, automation of construction, higher tension, larger inverter
Dii expects CAPEX of 700 €/kWp by 2050. Continuous competition between existing and emerging module technologies (like CPV and organic PV) will lead to constant innovation in the sector.

@ CSP
CSP is undergoing a major diversification process. Dii is monitoring developments in trough, tower and fresnel technology. Main drivers for further cost decreases will be:
- Heat Transfer Fluid (HTF)
  - Higher temperatures (e.g. through molton salt)
- System design
  - High efficiency troughs, new heliostat design, etc.
Dii expects system costs of 2000 €/kWe for CSP with 8h storage by 2050.

What are the barriers to investment in renewable energy outside Europe? How might these be overcome?
In a developing market context, where should the balance lie between meeting local energy needs at least cost and reducing global greenhouse gas emissions – the trade-off between affordable energy for all and sustainable energy for all?
Developing countries are usually reliant on foreign capital to finance energy investments and, where local financing is constrained, the costs of capital are high, which becomes an impediment to the implementation of energy infrastructures. IFIs such as the EIB have a significant role to play in mobilizing capital and financing for these countries, and in helping them obtain access to modern and more sustainable sources of energy.
Where can sources of low-cost finance be more effectively used by the private sector to develop energy projects?
What are the main barriers to developing sustainable energy sources in developing markets?

The answer to the set of question above depends on many factors:
@ Country:
Fuel exporting countries like Algeria face different problems than fuel importing countries like Morocco and Tunisia.
Technology
CSP needs further support, whereas Wind and PV are already cost competitive under certain circumstances in some MENA regions.

Investor origin
Foreign investors often lack experience with MENA countries. Local investors often lack experience with RE. Both facts cause unnecessary high return expectations on RE in MENA.

Generally, all emerging countries in the MENA region pay high subsidies on fossil fuels, which hinder further deployment of RE. Another similarity across MENA countries is their focus on job creation.

Main suggestions to overcome existing barriers in MENA are:

- Strengthening of local actors
  - Knowledge transfer to MENA actors to improve the understanding of RE benefits. This refers to benefits for the electricity system as well as the socioeconomic effects in terms of job creation.
  - Support local policy makers in creating stable and sufficient regulatory regimes.
  - Shift fossil fuel subsidies whenever possible to RE.
  - Convince local (mostly monopolistic) utilities of the advantages of RE.
  - Improve the understanding of local lender / investor on RE risks
  - Improve the understanding of foreign lender / investor on MENA market risks.
  - Ease the involvement of commercial tranches (local and foreign) in deals promoted by IFIs. So far there have been few deals that combine IFI and commercial finance.
• Risk mitigation facilities
  o Create better awareness about existing mechanism and instruments (NIF, CTF etc.). It is very difficult to get an overview about these at the moment.
  o Create mitigation options for foreign exchange risk. This causes a main barrier for foreign lending and equity investment at the moment. For lending, this could be done by a fronting mechanism where the IFI lends in local currency and other banks sign credit contracts with the IFI in a hard currency.
  o Establish mechanisms to structure projects in less riskier tranches that attract more investor groups.
  o Open the European project bond initiative for MENA projects.
  o Support on-the-ground measurement of irradiation and wind speed (e.g. by financing measurement stations). This mitigates the risk of project yields and related risk premiums.