**CLEAN ENERGY INDUSTRIAL FORUM ON RENEWABLES**

Background paper for the second High-Level meeting

 Prepared by the Task Force

The European Union has now agreed on a new regulatory framework for clean energy for the period from 2020 to 2030, and is at the same time developing its long-term decarbonisation strategy for 2050 in the context of the Paris agreement. These developments do not only set a clear pathway for the EU, but also marked a milestone for the world and the global economy.

The global energy transformation is a great opportunity for the European renewable energy industry. Private capitals are essential as the investment challenge is well beyond the capacity of the public sector alone. Indeed, it is expected that about €180 billion would be needed in additional yearly investments in the environmental, energetic and resource efficiency sectors. At a global level, the IPCC estimates that annually USD 2.5 trillion would be needed in the period up to 2040 to achieve the Paris Agreement, a significant market opportunity for the European renewable energy industry.

One of the instruments that the EU has to support industry is its European Fund for Strategic Investments (EFSI), which directed one third of its funds into energy, environment and resource efficiency, as well as social infrastructure in 2017. For EFSI 2.0, the EU has raised its investment target to €500 billion by 2020, of which more than 40% is going to be directed for projects helping to reach the Paris agreement objectives.

The 2nd edition of the Clean Energy Industrial Forum aims to address and discuss the critical financing topics related to the investment practices within the renewable energy industry. More precisely, it will address the topic of financing barriers with particular focus on cross-border, international and innovative projects. However, it is important to note that different technologies have different degrees of exposure to the various financing challenges. While all larger renewable energy projects will generally require access to long-term financing on a project finance basis, their exposure to other barriers will differ according to their specific nature, location and size.

**FINANCING RISKS**

Typically, project developers or customers do not have the capabilities to develop or order renewable energy projects purely based on their own saving. Consequently, they have the need to access external finance which means borrowing money from someone else before being able to invest. Private investors, which provided more than 90% of the global financing in 2016, are keys for the development of clean energy projects as a result of the public sector's incapacity to finance them all by itself. At the same time, there is a multitude of financing barriers that need to be faced and that usually lead those investments to be considered as unattractive from the investors' perspective. For this reason, risk mitigation in renewable energy projects is a particularly important matter for developers to have the ability of collecting private capitals.

One of the principal barriers related to financing renewable energy projects is the lack of long-term financing. Generally, renewable energy developers incur up-front capital costs, but lower ongoing operating expenses compared to conventional technologies. This implies a need for accessing to long-term funding. Not disposing such financing may lead to investment decisions being further bias toward conventional technologies that might be financially viable even with shorter loan terms. Outside the European Union, this barrier can be usually encountered in developing countries where the financial system is bank-dominated and thus lacking a well-developed capital market which also limits the availability of venture capital. This is particularly true in many Asian countries (such as China and India) in which banks are the main source of funding for major projects, including green renewable energy ones. The main implication arises from a maturity mismatch between banks' liabilities (deposits, which are at most 5 years) and assets (long-term loans). This reality has a major implication for such projects’ growth because of its impact on the availability of funds for their financing while determining what projects could be financed with the available funds. As a consequence, the limited availability of local debt finance can also lead to less favourable lending terms such as high cost, short tenor and variable rates.

Project finance is an increasingly more popular practice for funding renewable energy projects. Since 2004 the use of project finance in new clean energy plants increased from 16% of all projects to a remarkable share of 52% in 2015. Such loan structure relies primarily on the project's cash flow for repayment while the assets, rights and interests are held as secondary collateral. As a result of attracting large debt with minimum risk, project finance is definitely one of the most suitable financing structures for renewable energy projects. However, within the European Union a successful implementation of project finance can be constrained by the current capital and regulatory framework of the banking sector. Furthermore, renewable energy projects generally face the barrier of a more limited availability than most conventional technologies as a result of the higher share of capital costs compared to their total cost. In this regard, long-term Power Purchasing Agreements (PPAs) and feed-in-tariffs have a significant role in many countries in securing the investment by providing a fixed periodic inflow.

Also the lack of equity finance is a common financing barrier that is cited for renewable energy projects. While large numbers of developers exist, there are only limited numbers of large-scale project sponsors with the ability and willingness to fund them on a corporate finance basis. By being a capital intensive industry, investing in renewable energy can signify waiting a long time (even 25-30 years) before returns are achieved. Such issue clashes significantly with the vision and goals of investors such as corporate venture capital that aim to maximise return in a relative short-term (3 to 5 years). Furthermore, renewable energy projects are generally smaller than conventional generation projects, and this is reflected by the size of developers. The lack of equity capital means that project sponsors are often unable to cover the costs of development activities without external assistance. This is even more likely to happen in low-income countries as those countries bear higher risks from investors' perspective.

A further issue that has been mentioned is the difficulty of financing small scale projects, which arise increasingly more as a result of "decentralization". Indeed, the small size of many renewable energy projects creates significant problems in obtaining private financing. This can be particularly true for example for off-grid solar start-up companies that often face difficulties in securing working capital debt through bank loans and credit lines as a result of the early-stage nature of the business and lack of track record. In addition, economies of scale in due diligence are significant, and many larger financial institutions are generally unwilling to consider small projects. Typical due diligence costs for larger projects can be in the range of $0.5 million to $1 million. International commercial banks are generally not interested in projects below $10 million, while projects up to $20 million will find it difficult to obtain interest. But lower limits may apply for domestic and regional banks operating in smaller economies, especially where these lack the resources themselves to make large scale loans. While household, micro and mini systems are obviously far below these limits, even larger grid-connected renewable energy projects are generally smaller than their conventional counterparts. As a result, they often struggle to attract funding from larger financiers. These very small systems also face the problem of lack of local demand in rural areas, leading to underutilized assets and worsening financial returns and attractiveness to financiers.

**FINANCING INNOVATION**

On average, publicly owned financial actors clearly had a greater "risk appetite" than privately owned ones. While private finance has been greater in size, public finance has provided more high-risk financing such as in the case of innovation. Generally, the more a technology is at an early stage of its development, the more it is perceived as innovative, and inherently risky. Consequently, it is also more likely the need for public funding support. In this sense, for the EU is essential to have a strong and dynamic technology and innovation strategy to deliver its policy goals, strengthen its competitiveness and better coordinate investments. The energy technology and innovation policy needs to focus on reducing costs rapidly and speeding up the introduction of new sustainable technologies to the market. Indeed, new technologies are crucial to achieve all of the EU2020 objectives in energy, climate, economic and social policy, as well as those for 2030 and 2050.

For ensuring competitive, sustainable and secure energy in the years to come, it is required a significant investment. The EU already provides a number of funding programmes and lending schemes to help companies, regions, and countries to successfully implement innovative energy projects. The EU's Research and Innovation Programme Horizon 2020, NER 300, Cohesion Fund, European Investment Bank are just few of all the different funds, bodies or initiatives that can currently help financing innovation within the renewable energy sector.

Importantly, to help the industry and the power sectors meet these innovation and investment challenges, the Commission proposal for revision of the EU ETS post-2020 puts forward an Innovation Fund which will support innovative demonstration projects in energy intensive industries, renewable energy, energy storage and carbon capture, storage and use. The design of the Fund, including eligible technologies and financial modalities, will need to address the specific market needs and demand for low-carbon innovation, while ensuring effective use of the funds available.

**FURTHER INITIATIVES**

The EU is increasingly fostering the internal cooperation between the Member States as well as the regional and multilateral processes with neighbourhood countries through the Energy Union strategy and the Energy Community. On one side, it is aimed at facilitating the free flow of energy across borders and a secure supply for every European citizen. On the other, new technologies and renewed infrastructure are expected to contribute to cutting household bills and creating new jobs and skills, as companies expand exports and boost growth. This will lead to a sustainable, low carbon and environmentally friendly economy, putting Europe at the forefront of renewable energy production, clean energy technologies, and the fight against global warming. Such objectives are planned to be reached through a number of initiatives such as the Connecting Europe Facility, which will include a dedicated fund for cross-border renewable energy projects, European External Investment Plan (EIP), a clean energy transition sub-programme in the LIFE programme, the Neighbourhood Investment Platform (NIP) or the InvestEU Fund.

In addition, if Europe is to mobilise capital at scale for sustainable development, it needs a technically robust classification system to establish market clarity on what is 'sustainable'. Indeed, the lack of a common taxonomy, standard methodologies for reporting and information makes the risk analysis even more difficult. Furthermore, the taxonomy would enable market growth by re-orienting capital flows towards assets that contribute to sustainable development. This could be done by creating comparable standards, labels, products and jurisdictions, and by enabling market participants to invest in sustainability with greater confidence and ease.

**QUESTIONS FOR THE HIGH-LEVEL MEETING**

1. Which are the most urgent financing barriers that you face within the EU and for cross-border projects? Are these barriers different when it comes to projects with neighbourhood or partner countries?

2. In your experience, how can the development of small-scale projects within the EU and in partner and neighbourhood countries be improved?

3. Is innovation effectively targeted? How would you take advantage from the implementation of Innovation Fund?

4. Besides the current available EU initiatives and funds, are there any other specific areas, development stages or locations that the EU should address?

5. Do you consider a 'common taxonomy' a priority for boosting projects' development? How would you take advantage from its implementation?

6. Do you have any investment projects within the full European renewable energy industrial supply chain that you consider to be critical for European competitiveness?

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